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ORIGINAL ARTICLE.

SYRINGOMYELIA.

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IN a recent work[1] on diseases of the nervous system it is stated that "it is now quite a fashion in this country to report so-called cases of syringomyelitis." It it be a fashion it is one that seems to have but few votaries in the United States. For, since the publication of the first case by Dr. Starr,[2] certainly not many more than a dozen American cases have been recorded. The paucity of our literature on syringomyelia forms a striking contrast to the voluminous records of European authors on the subject. Schultze, Déjerine, Charcot, Hoffmann of Heidelberg, and many others have been enabled to base their studies of this disease on such abundant material as to justify the assertion that it is scarcely less common than disseminated sclerosis. Hoffmann alone recorded five cases in 1891,[3] and recently, in a very elaborate essay,[4] added a report of no fewer than eighteen.

Assiduously as syringomyelia has been studied for several years past, the interest in it does not seem to flag. Its pathology and the relations of the structural changes in the cord to the clinical manifestations are still subjects of laborious research. The diagnostic difficulties arising from its resemblance to certain other diseases render its study especially important. The question of its identity with Morvan's disease has not yet been answered to the satisfaction of all; and its resemblance to anesthetic leprosy has called forth the sensational assertion that syringomyelia and anesthetic leprosy form "a single morbid entity," varied only by climate or the hygienic conditions of the patient.[5]

In view of the sustained interest in all that concerns this remarkable malady, the report of the following case may not be unacceptable.

[1] "A Treatise on Nervous and Mental Diseases," by Landon Carter Gray, M.D., 1893.

[2] American Journal of the Medical Sciences, May, 1888.

[3] Volkmann's Sammlung, 1891, No. 20.

[4] Deutsche Zeitschrift für Nervenheilkunde, Bd. iii.

[5] Zambaco: Gaz. hebd., 1891. Quoted by Marestang, Revue de Méd., 1891, p. 783. In La Semaine Médicale, 1893, June 10, Zambaco maintains that not only Morvan's disease and syringomyelia, but also sclerodermia, sclerodactylia, aïnhum, morphea, and local asphyxia with symmetrical gangrene, are "nothing but varieties of one and the same prehistoric disease, old as the world, leprosy."

The patient, K. F., is an unmarried woman, twenty-five years old, a native of Boston, Mass., of Irish parentage, and resident in California since her second year. She presented herself at the San Francisco Polyclinic on the 13th of January last, with the statement that her hands were wasting, and added that she was insensible to pain or heat in the upper extremities. The disease began about six or seven years ago with a prickling sensation ("like when the foot is asleep") in the right deltoid region; this sensation gradually descended to the elbow, and thence down the forearm to the wrist; it has never been present on the left side. The patient found relief from the distressing feeling by directing her companions to strike her on the fleshy part of the right arm, and the more vigorous their blows the greater was the relief. She did not cease to be troubled in this way until about a year and a half later; in the meantime she had continued her occupation as a seamstress. While engaged in sewing and ironing she often sustained injuries to her hands which, although severe, entailed no suffering, and thus attracted her attention to the impairment of her sensation. She often burned herself and did not notice it until it had been pointed out to her; once she put her hand into very hot water and scalded it, but suffered no pain. Her fingers finally became very sore, so sore that she thought "they must rot off," and some of the nails fell off two or three times. About four years ago she abandoned her occupation and has since then injured herself less. While undergoing electric treatment the regulation of the strength of the constant current was occasionally left to the patient by her physician, and there being no painful sensation to warn her, a large running sore formed in the palm of the left hand, which healed very slowly, but did not distress her. The disturbance of sensation preceded the wasting of the hands. The right hand wasted first; there was twitching in the fingers and especially in the thumb, in which there was a sensation "like the fluttering of a bird trying to escape." The right hand had wasted to its present condition when (about three years ago) the atrophy of the left commenced. The patient is often annoyed by a jerking of the left lower limb; the jerking consists in violent flexion of the thigh and extension at the knee; it occurs most frequently and is most violent when the patient is recumbent and, according to the testimony of the mother, during sleep. It sometimes occurs while she is sitting, and is then arrested by standing. Fatigue after much walking intensifies the jerking. Occasionally there are cramps in the great toe of each foot, in which the toe is forcibly extended. Complaint is further made of pain at the back of the neck and in the palm of the hand.

Nothing was elicited indicating a family tendency to nervous diseases; but there seems to be a tuberculous taint, as the patient's father and sister and a maternal uncle are said to have died of pulmonary tuberculosis.

The patient is at present small and anemic. In both hands there is advanced muscular atrophy. The interossei are wasted, the absence of the interosseus primus being particularly noticeable. The thenar and the hypothenar eminences are flattened, the right thenar less than the left. The distal and middle phalanges are flexed, and the proximal phalanx is extended, whereby the "claw-hand" is produced, more markedly, however, on the right than on the left side. Flexion and extension at the wrist are preserved; but the atrophy of the intrinsic muscles of the hands is so great as to render the left hand practically useless and to seriously impair the use of the right. The advantage of the right hand over the left is due to the better condition of the opponens and the adductor pollicis in the former, and of the muscles in the right forearm. Abduction, extension and flexion of the thumbs are fair. Both forearms are thin, but the left is thinner than the right, the latter measuring 13 cm., the former only 12 cm. in the middle. The muscles of the upper arms and shoulder appear a little flabby, but not more so than might be expected from the patient's general nutrition; their functions are intact. The right arm measures 19.5 cm., the left 19 cm. around the middle. There is no atrophy of the trunk or of the lower limbs.

Fibrillary twitching is seen in the muscles on the inner side of the left forearm and in those of the hands; there is also a jerky tremor of the hands. As to the electric reactions, the muscles supplied by the musculo-spiral nerve react on both sides equally well and normally to direct and indirect galvanic and faradic excitation. The right median and ulnar nerves and the muscles of the forearm to which they are distributed respond fairly well but less promptly than the extensor muscles; in the same nerves and muscles of the left limb there is a considerable diminution of excitability by either current, without modal change, and the reduction of irritability is greater in the ulnar than in the median nerve and muscles. There is no typical reaction of degeneration in the small muscles of the hands; in accordance with what has been noted of the comparative preservation of motor power in the right thumb, contractions of the adductor and the opponens pollicis are obtainable by direct excitation or by excitation of their nerves at the wrist, with not very strong currents; in the other muscles of both hands the electric reactions are either greatly diminished or abolished.

The tactile, muscular, and stereognostic senses are preserved in all parts.

While the muscles of the upper extremities were being tested by faradism the patient gave no indication of pain even when strong currents were applied with a very small electrode. Other tests, however, disclosed that the analgesia was not absolute in these parts, deep punctures and strong pinches, particularly in the right hand and shoulder eliciting evidence of painful sensation. The analgesia is more profound throughout the left superior extremity than upon the right. It is most profound on the left side of the head (except a part of the face), on the left half of the neck and the left shoulder. It is slight, but still evident in comparison with the other side, on the median half of the left side of the face and on the left side of the mouth and tongue. The upper and lower regions of the chest are slightly analgesic, while the breasts are normal or nearly so. Ammonia held to the nostrils produces equal irritation on both sides. The analgesia in the hands is not as great as the statements of the patient would lead one to believe. The ulnar nerves are not sensitive to strong pressure at the elbows.

The insensibility to heat and cold coincides for the most part in distribution and degree with the analgesia. In the right hand it is less than in the left, and is far from absolute, although the impairment of the thermic sense is beyond doubt; but it is less than would be inferred from the history of the patient's experience. A piece of ice can be retained in the left hand almost indefinitely without causing discomfort, whereas in the right a stinging sensation of cold is announced after it has been held a short time. Water which was quite hot when applied to the right hand for the purpose of electric testing was not felt to be at all warm, whereas subsequently a test-tube filled with moderately warm water was distinguished from one filled with water of about 60° F.; and the distinction was made between the wooden handle and the metal part of a percussion hammer, when held in the right hand, by the temperature of the metal. The patient herself, however, when informed of the result of the tests, remains convinced of the insensibility of her hands to painful impressions, heat and cold, under ordinary circumstances. A piece of ice taken into the left side of the mouth is recognized as cold, but is immediately felt "several degrees colder" when shifted to the right side. An analogous difference obtains in regard to warm water. Dissociation of the temperature-sense itself was not observed.

Trophic changes are not pronounced apart from the muscular atrophy. A few insignificant scars indicate the sites of former injuries. The nails are not abnormal.

Nor are the vasomotor disturbances marked. On the chest and back the vasomotor irritability seems to be increased; this is especially noticeable when the finger is passed along the row of spinous processes. The hands are, as a rule, subjectively and objectively quite cold.

The iris-reflex is normal in either eye. The left conjunctival reflex is absent; the right one is present. The pharyngeal reflex is preserved. A brisk jaw-jerk can be obtained. The triceps-tendon reaction can be elicited in either arm. On percussion the supinator longus on each side contracts actively. No periosteal or tendon-reflexes exist at the wrists. The epigastric reflexes are absent. The knee-jerks are both much exaggerated, and are equal on the two sides. The tendo Achillis reflexes are quite active. The front-tap contraction is obtainable on either leg. Ankle-clonus was elicited on the left side at

one examination, but has not been produced since. The plantar reflexes are absent.

Hearing, taste, and smell are normal. The eyes were kindly examined for me by Dr. Pischl. V. with + 1.5 = 6/VI in both eyes. The field of vision determined for white and colors is normal. The ophthalmoscope reveals in the right eye a band of opaque nerve-fibers encircling the inner half of the papilla and equal in width to three-fourths the diameter of the disc. In the left eye a small patch of such fibers is seen at the upper, and another at the outer, edge of the disc. The papilla appears a little redder than is normal, which is probably due to the contrast with its white environment. There is a slight narrowing of the left palpebral fissure, its width being 8.5 mm., while that of the right is 9.0 mm.

The secretion of tears is more abundant in the left eye than in the right. As has already been mentioned, the left conjunctival reflex is abolished. The pupils react to light and in accommodation, and are equal. There is no nystagmus.

The spinal column is not tender to pressure. There is no scoliosis. On passing the finger down the row of spinous processes a peculiarity is felt in the shape of some of them in the lower dorsal and upper lumbar regions. The ninth dorsal spinous process is normal; the tenth is clubbed; the eleventh and twelfth dorsal and the first lumbar are clubbed and bifid; the second lumbar is like the tenth dorsal and the rest are normal.

The treatment since the patient has been under my care has consisted chiefly in the exhibition of iron. Her general health has improved, and she is now free from the pain in the back of the neck, but still complains occasionally that the hands ache.

The combination of symptoms such as have been described in the foregoing notes, consisting in progressive muscular atrophy of the Duchenne-Aran type and dissociation of sensory impressions, stamps this as a classical case of syringomyelia. If it be at all necessary to differentiate this malady from Morvan's disease, the absence of painless whitlows will be conclusive of the diagnosis.

How close the clinical resemblance between syringomyelia and anesthetic leprosy may be, despite the difference in pathology, is evident from the descriptions and illustrations furnished by Marestang. Dissociation of sensation has been observed by this author in leprosy; but only in one case among over one hundred was there retention of tactile sense with analgesia and thermoanesthesia, while in two cases there was retention of pain and of the thermic sense with tactile anesthesia. On the other hand, in syringomyelia loss of sense of contact has not infrequently been met with (which is not surprising, in view of its pathology). Such dissociations, however, are exceptional in leprosy, and the preservation of tactile sensation in syringomyelia is the rule. The muscular wasting in the extremities is similar in the two diseases, and even the atrophy of facial muscles, often seen in leprosy, has been observed in four cases of syringomyelia. Nevertheless a proper appreciation of what is frequent and what is rare in each, or the recognition of some characteristic of leprosy, such as anomalies of pigmentation, loss of hair, nodular thickening of nerves, the bacillus, etc., will generally lead to a diagnosis. But that errors may occur has been recently shown by Pitres[1] in his report of the case of a man who, presenting trophic disturbances and the sensory dissociation of syringomyelia, was for a long time considered to be suffering from that disease until the detection of Hansen's bacillus in a cutaneous nerve proved him to be affected with leprosy. This man had lived for three years in Martinique, and it is in countries which are in frequent communication with endemic foci that special caution is required. The Pacific coast is exposed to the occasional intrusion of lepers from Hawaii or China, and in the public eleemosynary institutions of San Francisco there are now thirteen lepers. But in the present instance, besides the absence of anything in the patient's antecedents likely to excite a suspicion of leprosy, and the lack of any symptom characteristic of that disease, the insensitiveness of the nerves to pressure, the fact that the disturbance of sensation is less profound at the peripheral parts of the upper extremities than in certain other regions, the fibrillary twitching, the augmented knee-jerks and the narrowing of the left palpebral fissure, decide in favor of syringomyelia.

Hysteria, that arch-mimic of organic nervous disorders, has also been known to simulate syringomyelia. Cases of this kind have been reported by Charcot[2] and by Rossolimo.[3] The latter tells of a girl, aged twenty, with interosseal paresis, analgesia, and thermoanesthesia, but only slight diminution of tactile sensation, in her hands. This combination of symptoms had recurred six times, in the course of a year and a half, at regular intervals, and disappeared promptly after an hypnotic séance. To discuss the possibility of the hysterical nature of the case now under consideration would appear like raising objections to a diagnosis simply for the pleasure of refuting them. Nor does it seem necessary to enumerate the features distinguishing cervical hypertrophic pachymeningitis from syringomyelia, the anesthesia in the district of cranial nerves alone sufficing to exclude the former.

The possibility of diagnosticating syringomyelia during life is not yet universally conceded. In the discussion of a case presented before the Neurological Society of New York, in 1890, the president, Dr.

[1] Gaz. des Hôpitaux, 1892, No. 137; abstract in Neurolog. Centralblatt, 1893, p. 102. See also Kalindero: Wiener med. Presse, 1892, No. 39.

[2] Leçons du Mardi, 1888–1889, p. 518.

[3] Neurolog. Centralblatt, 1892, p. 493.

L. C. Gray, said: "The only way to make a diagnosis of syringomyelia was to make an autopsy."[1] And the same view is expressed in his recent *Treatise on Nervous and Mental Diseases*,[2] although he acknowledges "that we are on the right track and that we shall be able to make a diagnosis in the early future." The fact is, however, that the diagnosis has been repeatedly made *intra vitam* and verified *post mortem*. Charcot[3] stated in 1889 that Schultze had twice and Kahler once found the diagnosis justified at the autopsy. Moreover, Déjerine,[4] in 1890, and again in 1891,[5] and with Sottas,[6] in 1892, reported cases in which the diagnosis of syringomyelia, which, during life, had been based on the muscular atrophy and the sensory dissociation, was corroborated after death. Verified diagnoses have also been recorded by Gyurman,[7] Critzmann,[8] and Bernstein.[9] In a report of a case of syringomyelia by Hughlings Jackson and Galloway[10] mention is made of an instance in which a diagnosis of Ferrier's was proved to be right at the necropsy. In Hoffmann's[11] Cases IX and XIV the disease had been recognized during the lifetime of the patients. Finally, the reviewer of Dr. Gray's book in the *American Journal of the Medical Sciences* for March, 1893, states that two cases of syringomyelia have been diagnosticated *intra vitam* in Philadelphia, and that the autopsy confirmed the diagnosis; the cases had, however, not yet been published. One of them is, perhaps, identical with that very recently recorded by J. H. Lloyd.[12]

This list makes no pretensions to being exhaustive, but it will suffice to show that the diagnosis may be ventured with some degree of certainty. Not all of the cases conformed to the most frequent type, but the pathognostic value of progressive amyotrophy with impairment, and generally dissociation of sensation, was sufficient to guide the observers to the recognition of the disease. The assumption of syringomyelia explains the course and the symptoms of the case with which we are dealing. The process of gliosis, taking its origin in the gray substance behind the central canal in the lower cervical region and extending into the posterior cornua, produced the subjective and objective disturbances of sensation in the upper extremities; ascending in the left posterior horn into the central regions of the occipital nerve and of the sensory part of the trigeminus, it impaired sensation in the left side of the head and face, and, descending into the dorsal part of the cord, rendered sensation on the trunk abnormal; the invasion of the right and left anterior cornua, successively, in the lowest cervical and first dorsal segments, gave rise to atrophy of the small hand-muscles in the same order, and, from the wasting of the muscles of the left fore-arm, it is evident that the destructive process is extending into the anterior horn higher up. The distressing jerking in the left lower limb may possibly be due to irritation of the lateral pyramidal tract on the same side. It may be mentioned that a similar symptom was noted in one of Schultze's[1] cases.

The loss of the left conjunctival reflex is due to the sensory disturbance in the distribution of the fifth nerve, and the slight narrowing of the left palpebral fissure is ascribable to the implication of sympathetic fibers in the lesion at the lowest cervical and uppermost dorsal segments. There is no concentric limitation of the field of vision. According to Hoffmann,[2] limitation of the visual field has been observed by Déjerine and Tuilant in seven, and by Morvan in five cases of syringomyelia, without hysteria; by other authors it has been found in five patients with syringomyelia in whom hysteria was either certain or at least probable; and it was absent in 26 cases. Including the present instance, therefore, its absence has been noted in 27 out of 44 cases of syringomyelia. Its comparative frequency in the French cases is conspicuous.

The opaque nerve-fibers in the retina merit some attention. This anomaly is rare. Manz,[3] of Freiburg, states that he found this opacity mentioned only 154 times in the records of half-a-million patients with ocular diseases. But among 113 psychopathic male inmates of a Freiburg institution opaque nerve-fibers were observed in the eyes of four. Manz had already previously[4] called attention to the possible value of this, as well as other congenital anomalies of the eye, as indicating a neuropathic predisposition, although they are not necessarily pathologic; and he suggested that they were likely to be found associated with certain diseases dependent on congenital abnormalities of the central nervous organs. Now, according to the prevailing theory, the origin of syringomyelia is to be sought in a defect in the developmental tendency of the spinal cord, or, as Hoffmann more definitely expresses it, in a defective closure of the embryonic canal, whereby germinal cells are retained in the line of closure which

[1] Boston Med. and Surg. Journal, 1890, vol. cxxiii, p. 570.
[2] Pp. 267 and 268.
[3] Leçons du Mardi, 1888–1889, p. 488.
[4] Société de Biologie, February 8, 1890.
[5] La Semaine Médicale, 1891, No. 6.
[6] See Neurolog. Centralblatt, 1892, p. 710.
[7] Abstract in Neurolog. Centralbl., 1891, p 504.
[8] Essai sur la Syringomyélie, 1892; Neurolog. Centralbl., 1892, p. 708.
[9] Neurolog. Centralbl., 1893, No. 3, abstract.
[10] Lancet, Feb. 20, 1892.
[11] Deutsche Zeitschrift für Nervenheilkunde, Bd. iii.
[12] University Medical Magazine, March, 1893.

[1] Virchow's Archiv, Bd. 102.
[2] Deutsche Zeitschrift für Nervenheilkunde, iii, p. 16.
[3] Berliner klinische Wochenschrift, 1890, p. 955.
[4] Arch. f. Psychiatrie, 1884, xv, p. 837.

subsequently proliferate and lead to primary gliosis. In support of the view that a defect in the original constitution of the central nervous system is responsible for the development of syringomyelia Hoffmann adduces some cases in which that disease was combined with other nervous diseases generally considered as arising from a congenital predisposition, and in others in which at the autopsy abnormal anatomic features were found that must be regarded as developmental errors. Among the latter are mentioned an abnormal strand of white fibers in front of the anterior commissure, heterotopia of gelatinous substance in a posterior column, heterotopia of gray matter, etc. The presence of medullated (opaque) nerve-fibers in the retina is submitted as an addition to this list.

In conclusion, the peculiar form noted in some of the spinous processes may be alluded to as perhaps indicating some developmental irregularity.

ORIGINAL LECTURES.

THE VALUE OF STRYCHNINE IN THE TREATMENT OF DISEASES OF THE LUNGS.[1]

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ABOUT five years ago I began the use of strychnine in the treatment of asthma, with good effects, and believing, as I did then and as I still do, that probably most pulmonary diseases have a pathologic basis similar to that of asthma, or in other words that they are intimately related to the nervous system, I have since been induced to test the efficacy of this drug in the treatment of the various inflammatory affections of the respiratory organs; and my purpose this evening is to give an account of the results of its administration, and also to present my views as to its therapeutic action in these diseases.

It is well known that no drug in the materia medica affects the nervous system more profoundly than strychnine. Its action is principally confined to the medulla oblongata, the spinal cord, and the peripheral motor nerves. Consciousness and the higher nerve-centers seem to be wholly unaffected by it. It is a most powerful stimulant in small doses; a convulsant in medium doses; and a narcotic or paralyzant in large doses. The narcotic or paralyzant action of strychnine is generally overlooked in the discussion of its physiologic properties; but it has been very well demonstrated, especially by Reichert, that, if large doses are injected, no convulsions occur, the animal becoming as limp as if it had been paralyzed by a large dose of morphine or of curare.

Strychnine also differs greatly in action from other stimulants, inasmuch as its stimulating stage occurs markedly and pronouncedly before its convulsant or paralyzing phases. Besides its general action on the medulla oblongata, spinal cord, and peripheral nervous system, strychnine possesses a special influence on the respiratory centers and pneumogastric nerves. In man and in animals it accelerates the breathing movements and provokes deeper and fuller inspirations. Indeed, when excessive doses are given, so that convulsions are excited, this influence is so great that the thoracic movements are arrested at the period of maximum inspiration. While this is true of the action of large doses of strychnine on normal respiration, the drug has an opposite effect if given in smaller or stimulant doses when the breathing is hurried from disease. This I have confirmed by clinical observation in cases in which the abnormally high respiration-rate was incidental to nervous exhaustion accompanied by subnormal temperature. The same is true of its action on the heart. In large doses it accelerates the movements of this organ, but in smaller doses, given hypodermatically, say from $\frac{1}{80}$ to $\frac{1}{70}$ of a grain, I have seen it reduce the cardiac pulsations from 100 to 84 in the course of a few minutes.

Over and above its stimulating action on the nervous system, or perhaps indirectly through the sympathetic and pneumogastric nerves, strychnine possesses the power of increasing the absorption of the products of digestion in the alimentary canal and of enhancing the blood-building process. This observation we owe to the brilliant researches recently made by Professor Hofmeister and his pupil Dr. Pohl.[1] Before these experiments were made we knew little or nothing concerning the function of alimentary absorption, except that the food-products were taken up in some fashion by the bloodvessels and by the lacteals of the stomach and of the intestines. That the albuminous food is changed into peptone had been demonstrated clearly enough; that peptone does not enter the blood in a free state was also plainly evident from the fact that it is not found as such in the blood, and that when injected into the blood it acts as an active irritant and poison, and is rapidly eliminated by the kidneys.

Now, Professor Hofmeister has demonstrated in these experiments that during digestion there is a very decided augmentation in the number of white blood-corpuscles formed and developed in the adenoid tissue or lymphatic glands of the alimentary mucous membrane; that these corpuscles imbibe and incorporate the peptone formed by the digestive process; and that the peptone loses its identity in and is distributed by them to the tissues of the body by way of the circulation. It does not concern us here to know whether the tissues of the body take up the nutritive material from the white blood-corpuscles or peptone, or whether peptone is changed into some other form of albumin before it reaches its destination.

That which is of the greatest interest here, however, is the investigation of Dr. Pohl, who studied the physiologic influence of different kinds of food and drugs on the white blood-corpuscle formation in the lympathic tissue of the alimentary canal. He counted the number of white blood-cells in the blood of dogs before and after these foods and drugs were administered by the mouth, and found an average increase in these cells of more than 100 per cent. after the ingestion of albuminous foods, but no increase in their number when carbohydrates, fats, alcohol, salts, water, and foods of a non-

[1] Delivered to the Polyclinic Class, February 6, 1893.

[1] Archiv für experimentelle Pathologie u. Pharmakologie, vol. xix, p. 1, and vol. xxv, p. 31.

albuminous nature were given. On the other hand, he tested the action of strychnine and of other medicinal agents in the same manner, and discovered that some were inert, while others had a most remarkable influence in this respect. For example, he found that strychnine, which was one of the best agents, nearly equalled beef in its power of augmenting the number of colorless blood-cells.

In estimating the therapeutic value of strychnine we must, therefore, not overlook the property which it possesses of enhancing the process of white blood-cell formation. This means a great deal. It means that, in addition to its other functions, it is a genuine blood-builder. It means that it greatly aids the lymph-glands of Peyer, with which the intestinal walls are studded, in common with the spleen and the other lympathic glands throughout the body, in transforming and organizing reserve nutritive material into white blood-cells. The importance of this influence will be fully realized when we consider that recent advances in physiology make it exceedingly probable that a large number of red blood-corpuscles are nothing but transmuted white blood-cells—the change consisting chiefly in a transformation of the protoplasm of the latter into hemoglobin and stroma. Unlike food, strychnine does not supply the material from which these cells are formed, but it furnishes the force which stimulates to increased activity the organs whose function it is to generate them. To sum up, then, the action of strychnine, it can be said that over and above its influence on the general spinal nervous system, it acts specifically on the medulla oblongata, on the respiratory centers, and on the pneumograstric nerves, and additionally possesses the power of invigorating the blood-making process.

In the present state of therapeutics it goes without saying that if there is not, there should be some rational indication in any given disease for the remedial agent that is employed. What then, viewed from this standpoint, is the indication for the administration of strychnine in the various forms of pulmonary disease? I have already intimated my belief that diseases of the lungs are closely associated with disease of the nervous system, and I will go further and say that this relationship is one of cause and effect—that the diseases of the lungs exist in virtue of disease of the pneumogastric nerves and other parts of the nervous system.

It is exceedingly strange that, in spite of the great advance recently made in the study of diseases of the nervous system, the physiologic and pathologic connection between the lungs and their nerve-supply has been practically ignored. The lungs are innervated by the largest and most important nerves in the body, yet nearly all the diseases that affect these organs are at the present day attributed to the influence of irritants introduced from without, and the possibility that the fault may reside in the nerve-supply does not even receive serious consideration. This is indeed exceptional, for it is not in the least true in disease of other organs. When, for example, an arm, or a leg, or an eye becomes subject to certain forms of disease, immediate inquiry is made into the state of their nerve-supply, which is often found to be wholly responsible for the disordered manifestation. Paralytic ophthalmia, which has been described by Serres, Herbert, Mayo, Abercrombie, Stanley, and others, is, owing to the experiments of Magendie, known to depend on disease of the trigeminal nerve. Ulceration of the skin and subjacent tissues follows injury to the spine. Cutaneous inflammations, like zoster, eczema, acne, pemphigus, erythema, excoriations, elephantiasis, etc., are often sequential to diseases of the nerves that supply the affected parts. Intermittent ophthalmia, intermittent otitis, intermittent arthritis exist in virtue of intermtttent neuralgia of the supplying nerves. Peripheral neuritis gives rise to herpes intercostalis, frontalis, preputialis, etc., and it is also demonstrated that leprosy, scleroderma, and the disease first described by Paget, under the name of *glossy skin and fingers*, are intimately associated with the underlying nerves.

Now when all these general facts are connected with the special one that experiments almost without number have been made on animals, which, with hardly an exception, show that many of the catarrhal and inflammatory affections of the lungs follow division of or injury to the pneumogastric nerves, there is cause for still greater surprise at the persistence with which this frequent source of lung-disease has been disregarded. I am well aware that this pulmonary degeneration is known by the name of "Schluck" or deglutition pneumonia, which implies that it is not primarily due to vagus-injury, but to the entrance of mucus, saliva, particles of food, etc., into the lungs, owing to the insensibility of the larynx and paralysis of the esophagus, sequential to operation. Aside from the fact that this is a weak and irrelevant argument, in so far as the final cause of this phenomenon is concerned, Arnsperger[1] and others have shown that if, after section of the nerves in question, a tube is inserted in the trachea, and the admission of foreign bodies into the lungs is prevented, the same pulmonary changes occur. But even if it were clearly demonstrated that, owing to a defect of nerve-influence in the larynx and pharynx, particles of food, mucus, saliva, and other secretions of the mouth and pharynx penetrate the lungs, and have the power of setting up pneumonia in animals, which no one has yet shown, we would, after all, have to inquire whether or not the same conditions and the same train of phenomena may develop in man as a sequel to disease of the vagus and its branches.

It is not necessary, however, to look to experiments on animals alone for proof that lesions of the pneumogastric nerves are capable of producing various pulmonary diseases, for there are many instances on record in which pulmonary consumption, pneumonia, bronchitis, etc., have occurred as a result of disease of these nerves, as will be seen from the tabular report[2] of about one hundred and fifty cases which I gathered from the literature on this subject, and which show the intimate dependence of the one on the other. Aside from this evidence I shall take the liberty of quoting the opinions of medical men whose attention had been especially directed to this subject, and who are abundantly capable of passing intelligent judgment on it.

As early as 1850 Dr. J. C. Holland regarded pulmonary consumption as "a disordered condition of the nervous system." In 1871 Dr. Clifford Allbutt[3] describes a

[1] Virchow's Archiv, vol. ix, pp. 197 and 437.

[2] Pulmonary Consumption a Nervous Disease. 1891. George S. Davis, publisher, Detroit, Mich.

[3] Medical Times and Gazette, 1871, vol. ii, p. 613.

variety of phthisis which he calls the neurotic type, and he says of it: "The more I study the relations of the disease the more satisfied I am that the lung-mischief is also a neurosis—by which I mean that the lesion is one not originating in the local tissues, but in the nervous system." Laycock[1] says that "Defective pneumogastric innervation upon a loss of cerebro-spinal power is a very common predisposing and exciting cause of phthisis." In discussing a paper on "Pneumo-paresis," read by Dr. W. B. Richardson before the London Medical Society, Dr. J. Hughlings Jackson remarked that he regarded acute pneumonia as a form of herpes zoster of the pneumogastric nerves.[2] Dr. Peter[3] states that neuralgia of the pneumogastric nerve is very common in pulmonary phthisis, as may be shown by making pressure over the nerve in front of the scaleni. Dr. Fernet[4] holds that so-called fibrinous pneumonia is a herpes of the lungs, brought about through neuritis of the pneumogastric nerves. Drs. Bianchi and Armandi[5] report that in eleven cases of terminal pneumonia in paralytics they found neuritis of the vagi in every instance.

Dr. Bianchi[6] discusses a form of pneumonia that frequently occurs in paralytics, but which differs clinically and anatomically from croupous pneumonia. The temperature is usually below 39°, while the pulse varies from 50 to 140 beats; cough and expectoration are absent sometimes, and the respiratory movements are feeble, slow, and superficial. Percussion and auscultation do not always give positive results. Fibrinous exudation is seldom present, and the affected lung usually remains in a hepatized condition. Frequently there exist larger or smaller gangrenous foci, and nearly always, if the case is of long standing, a puriform infiltration of the bronchi and alveoli. All of these manifestations simulate those of pneumonia following section or compression of the vagi, and which the author generated in rabbits and dogs. In a number of paralytics who died of pneumonia he was able to trace a primary degenerative atrophy of the vagi, and hence he believes that these pneumonias are dependent on vagus-degeneration. He does not accept the doctrine of Traube and Frey that this disease is engendered by the swallowing of food, etc. (*Schluck-pneumonie*).

Prof. Baelz[7] states that in the Japanese University he teaches that pneumonia is a reflex vasomotor exudative neurosis. Goodhart[8] says: "I really believe that injuries to the head are quite capable, by interfering with the control-power of the nervous centers, of leading to disordered function in the first instance, and in the second to such pronounced organic departures even as an acute pneumonia." Dr. Jappa,[9] who examined the peripheral nerves in the bodies of fifteen persons dead of pulmonary phthisis, found marked degeneration in every case. He states that in these patients there were no nervous symptoms during life other than those found in almost all cases of the kind, such as undefined muscle-pains, neuralgia, hyperesthesia, etc. Dr. Lewin,[1] in a minute study of the ganglion of the trunk of the vagus in twenty cases of pulmonary phthisis, found it degenerated in every instance. Busi[2] states that in many cases we must regard tuberculosis and insanity as an expression of the same constitutional weakness. In 50 per cent. of the cases of insanity which he collected in the Asylum for the Insane at Basle there was tuberculous heredity; in 47.2 per cent. there was neuropathic heredity; and in 20 per cent. there was a mixture of neuropathic and tuberculous heredity. Dr. O. Vierordt[3] states that on the whole no decided opinion can yet be given on the subject of the relationship between pulmonary phthisis and peripheral nerve-degeneration, but the indications of such a possibility are so apparent that a further investigation is demanded. Clouston[4] states that "The evidence seems to show that if tuberculosis cannot itself be called a neurosis, it is in most cases dependent for its existence on a trophic neurosis, or has the closest affinity to it."

Dr. Samuel Wilks, in commenting on a case of neuroma, says:[5] "It has been said that the patient died of phthisis, and these tumors were found accidentally; but in all probability the affection of the nerves, that is, of the pneumogastrics, was the cause of the pulmonary disease, and, therefore, so far from neuroma being a harmless affection, it was the cause of the girl's death. This idea is suggested by the observation of several cases of pneumonia occurring in connection with disease of these nerves—particularly as witnessed in aneurism of the aorta and cancer of the esophagus. In these diseases death is often brought about by the pulmonary complication, and the pneumogastric nerves are found implicated in the disease or pressed on by the tumor."

On a case of fibroma in the posterior mediastinum, the eminent Sir Wm. Gull[6] made the following remarks forty years ago: "This case affords an excellent illustration of the effects which are referable to paralysis of the pulmonary plexus on one side—accumulation of muco-purulent secretion in the paralyzed bronchi, subsequent dilatation of the tubes at their peripheral distribution, concomitant exudation into the air-cells, hepatization, and, at length, disintegration of tissue. . . . . It is one of the evils of a too exclusively humoral pathology [bacillary pathology, we might substitute at the present day—Mays] that it leads us to overlook the minute anatomical relations of disease, which are in themselves often a key to the sequence of morbid changes. These cases illustrate this proposition, for the possible local effects on the lung of injury to the pneumogastric and pulmonary plexus being recognized, whenever cause for that injury exists we may anticipate its results, and are not wholly dependent on physical examination, as we are if we limit our pathological view to the mere changes in the lung, without considering how they are produced."

[1] Medical Times and Gazette, 1862, p. 205.
[2] See London Medical Society's Proceedings, vol. xi, p. 95.
[3] Gaz. des Hôpitaux, 1876, No. 88; New York Med. Journ., vol. xxv, p. 212.
[4] Praktische Heilkunde, 1879, i, p. 18.
[5] Neurologisches Centralblatt, 1888, vol. vii, p. 452.
[6] Ibid., 1890, p. 249.
[7] Centralbl. f. klin. Med., 1888, p. 883.
[8] Common Neuroses, p. 41.
[9] Neurologisches Centralblatt, 1888, Bd. vii, p. 425.

[1] Beiträge zur Pathologie der N. Vagus. 1888.
[2] Neurologisches Centralblatt, 1887, p. 282.
[3] "A Contribution to the Study of Multiple Degenerative Neuritis," Archiv f. Psychiatrie u. Nervenkrankheiten, 1883, p. 678.
[4] The Neuroses of Development, p. 92.
[5] Trans. London Path. Society, vol. x, p. 1.
[6] Guy's Hospital Reports, 3d series, vol. v, p. 307.

From what has so far been said it is obvious that we possess both experimental and clinical evidence, of the most incontrovertible character, that many forms of pulmonary disease may and do originate through the intervention of disease of the pneumogastric nerves. By this it is, of course, not implied that one must look for a compression of these nerves by aneurisms, tumors, or enlarged glands in all cases, but that we must recognize the fact that any depression or poisoning of the nervous system, whether this is produced by peripheral neuritis, by disease of or injury to the spinal cord or the brain, by cerebro-spinal meningitis, influenza, diphtheria, beri-beri, leprosy, whooping-cough, alcohol, syphilis, diabetes, mercury, lead, brass, etc., is always capable of producing pulmonary degeneration. It is just as reasonable to believe that many pulmonary affections are developed through pneumogastric disease as it is to believe that asthma, which is universally regarded as a neurosis, and which leads to bronchitis, pneumonia, and phthisis, is developed through the same channel. I have on a number of occasions shown the great utility of strychnine in the treatment of asthma before this class, and if clinical experience is able to demonstrate, as I feel confident it will be, that the power of strychnine to alleviate bronchitis, pneumonia, phthisis, etc., is of no less importance than it is in asthma, it is another strong link in the chain which supports the theory that most pulmonary disorders are primarily and throughout largely nervous in nature. Indeed, if strychnine has any value whatever in these diseases, no other possible conception of its action can be formed than that which it possesses through its influence on the nervous system.

The General Therapeutic Action of Strychnine in Diseases of the Respiratory Organs.

There are very few drugs in the materia medica the beneficial effects of which manifest themselves more quickly and more promptly in pulmonary diseases than those of strychnine. One of its earliest ameliorating influences is seen in the lessened amount of cough and expectoration. Another is the relief which it affords to difficult breathing and in quieting the nervous restlessness. There is also a reduction in the accelerated pulse-rate. The alleviation of these symptoms is especially pronounced in those who suffer from chronic bronchitis or asthma. At the same time the patient has a desire for more food, and begins to increase in weight and gain in strength. This tendency to put on flesh seems to be one of the peculiar attributes of strychnine. Thus, I have observed that the hypodermatic administration of this drug daily, in doses of $\frac{1}{24}$ of a grain, other conditions remaining the same, added five pounds in the course of eight days to the weight of a patient suffering from angina pectoris. I have seen the same improvement in other diseases in which this agent was given by the mouth. This power on the part of strychnine to augment bodily weight is really a very important one, inasmuch as it demonstrates that drugs which are exclusively stimulant in their action are also constructive agents in an indirect sense, although, unlike food, they contribute no material whereby the bodily tissues are built up. They act very much like the spur or the whip does on a lazy horse. They enhance molecular or vital activity, and in doing this they cause the tissue-cells to assimilate and to appropriate an increased amount of reserve nutritive material.

Dose of Strychnine.

The amount of strychnine which is given is of more importance than the mere giving of the drug itself. I have long been convinced that in the great majority of diseases strychnine is inert on account of the diminutiveness of the dose in which it is commonly administered, and that to secure the greatest and best possible advantage, it is necessary to push it to the point of therapeutic tolerance. From this it is not to be inferred that the patient should be exposed to the risk of strychnine-poisoning, but that the constitution should be slowly impressed with the influence of the drug until there is developed a heightened reflex irritability and general restlessness, or until brilliant light or loud sounds produce a painful sensation in the eyes and ears, or until diarrhea occurs. When these symptoms begin to show themselves the quantity of the drug must be reduced, either by diminishing the dose or by giving the dose which was previously given at longer intervals. The same dose which develops toxic symptoms at one time may, however, subsequently be given with perfect impunity—showing that instead of being cumulative, as it is generally supposed to be, it establishes a tolerance for itself.

So far as my experience goes, the best results are obtained from strychnine by beginning with doses of $\frac{1}{32}$ of a grain four times a day, and although this may seem to be a large amount to start with, practically it is well borne in most cases. Indeed, it seems as if most of those who are suffering from asthma, bronchitis, and kindred diseases, bear larger doses of this drug than those who suffer from other general affections. After finding that this dose agrees, I give it for two weeks, and then begin to increase it $\frac{1}{8}$ of a grain each week, until the patient begins to manifest some physiologic disturbance due to its action. In some cases this does not occur until $\frac{1}{4}$ or $\frac{1}{8}$ of a grain, or even a larger dose is given, four times a day. My usual way of administering strychnine in pulmonary diseases is to combine it with the following drugs, which I believe have the power of enhancing its action and of meeting some collateral indications in these cases.

℞.—Phenacetini, Acetanilidi, Quininæ sulph. . . . āā gr. xxxij.
Pulv. capsici . . . . gr. v.
Ammon. chlorid. . . . . ℥j.
Strychninæ sulph. . . . . gr. j.
Atropinæ sulph. . . . . gr. $\frac{1}{25}$.—M.
Ft. capsulas no. xxxij.
Sig.—One capsule four times a day.

This combination may be modified. If there is much fever the doses of phenacetin and acetanilid may be doubled or trebled, and in case of marked sweating the atropine may also be increased. In pulmonary diseases brought on by the abuse of alcohol the dose of capsicum may be largely augmented with benefit.

The Special Application of Strychnine.

The special application of strychnine to individual pulmonary diseases will now be considered in the fol-

lowing order: (1) asthma; (2) bronchitis; (3) emphysema; (4) croupous pneumonia; and (5) pulmonary consumption.

ASTHMA.—In the treatment of asthma it is advisable to begin with $\frac{1}{30}$ of a grain hypodermatically, and on account of the nocturnal nature of the disease, if possible, give the injection in the evening, so that its influence may fully extend to the time of the attack. In addition to this, give from $\frac{1}{32}$ to $\frac{1}{30}$ of a grain of the same drug four times a day in connection with the phenacetin, etc., in the aforementioned capsules, or the same dose may be administered with half a dram each of syrup of hydriodic acid and syrup of the hypophosphites, four times a day. Increase the dose of strychnine gradually, both in the hypodermatic injections and in its administration by the mouth. As much as $\frac{1}{20}$ of a grain is easily borne by most asthmatics, and the injections should be repeated every, or every other, evening until the attacks disappear. If the attack is very stubborn, and the patient has lost a great deal of rest, add $\frac{1}{20}$ of a grain of morphine to the first few evening injections. Due attention, must of course, be given to food, diathesis, state of the excretions, rest, well-regulated exercise, etc., in all cases of this kind.

CHRONIC BRONCHITIS.—In this disease strychnine is strongly indicated and always used with advantage. This holds as well in that form which is idiopathic or primary as it does in that which is secondary to some cardiac disorder. As a rule, there is less urgency for relief in this disease than there is in asthma, and hence the hypodermatic administration of strychnine is less imperative. In the primary form in adults, commence the treatment by giving $\frac{1}{32}$ of a grain four times a day with syrup of the hypophosphites and syrup of hydriodic acid, and slowly increase to $\frac{1}{20}$ or $\frac{1}{16}$ of a grain. In cardiac or secondary bronchitis five drops of the tincture of digitalis may be added to each dose of strychnine. This is not essential, however, for cardiac bronchitis, especially when associated with irregularity of the heart's action, will do remarkably well under the strychnine and syrups alone. Of course it is always of the greatest importance to unload the portal circulation by free catharsis with calomel at the very outset. When the expectoration is profuse, combine the strychnine with phenacetin, quinine, atropine, capsicum, and ammonium chlorid. In the chronic bronchitis of children more than eight years old, begin with $\frac{1}{40}$ of a grain of strychnine with the syrups, three times a day, and gradually increase to $\frac{1}{32}$ of a grain at the same intervals. In children it is especially advisable to apply a weak liniment composed of croton oil and sweet oil, one part of the former to five parts of the latter, well rubbed in the chest, morning and evening, until a crop of fine pustules is produced.

EMPHYSEMA.—This disease is usually secondary to asthma, chronic bronchitis, pneumonia, or phthisis, and consists of a more or less permanent dilatation of the pulmonary air-cells on account of a loss of contractility or elasticity of the walls of these structures. Although we know nothing of the distribution of nerve-fibers to the vesicular parts of the lungs, or whether strychnine has the power of contracting or of giving tone to the distended vesicles, it is quite certain that this agent has a wonderful ameliorating influence on this morbid condition—perhaps more by relieving the concomitant bronchitis, by fortifying the parts less seriously implicated and by increasing the constitutional vigor, than by any direct action. In the beginning of the treatment $\frac{1}{32}$ of a grain should be given to adults four times a day, and this should be progressively increased until a decided impression is made on the patient. If the dyspnea is very pronounced, this dose may be reinforced by an injection of $\frac{1}{30}$ of a grain of the same drug daily or every other day.

CROUPOUS PNEUMONIA.—The employment of strychnine in large doses in the treatment of croupous pneumonia is, so far as I know, chiefly owing to the clinical researches of Dr. Brunton, which, if I remember rightly, were published in the *British Medical Journal* about eighteen months ago. At any rate, his experience led me to test it, and I can fully confirm his favorable opinion of its action. My method of administering this drug in croupous pneumonia is as follows: Immediately after seeing an adult case, I give $\frac{1}{30}$ of a grain hypodermatically, and $\frac{1}{30}$ of a grain by the mouth, alternately every three hours. The hypodermatic injections, together with the internal administration, are continued until decided restlessness begins to be shown by the patient, which usually occurs on the fourth or fifth day of the treatment. In some cases this appears earlier. Old alcoholics who suffer from this disease bear even larger doses with great benefit. It is worthy of remark, too, that strychnine has a sedative influence on the restlessness, delirium, picking at the bed-clothing, etc., which are caused by the disease. Care must, therefore, be exercised so that these symptoms are not mistaken for the toxic action of the drug. Strychnine, in connection with the external application of ice in rubber bags, and nutritious food, has given me most unexceptionable results in the treatment of croupous pneumonia, for a record of which I beg to refer to my two communications on this subject, which were published in THE MEDICAL NEWS for September 24, 1892, and January 21, 1893. Since that time I have adopted the method in other cases, and have collected quite a number of cases from other practitioners who have been kind enough to test it, all of which I shall prepare for publication at an early day. Strychnine is also very serviceable during convalescence from pneumonia, in combination with the syrup of hypophosphites and syrup of hydriodic acid, as follows:

℞.—Strychninæ sulph. . . . gr. 1 or 1⅛.
Syr. acidi hydriodici. }
Syr. hypophosphit. } . āā f℥ij.—M.

Sig.—One teaspoonful four times daily.

PULMONARY PHTHISIS.—Strychnine is no less valuable in phthisis than it is in any of the diseases in which its action has been discussed this evening, although its effects may be less apparent because it is given in a disease which is essentially chronic in its nature and is less impressible than are acute or functional diseases. Nevertheless I regard it as an indispensable agent in the treatment of this affection, and almost invariably administer $\frac{1}{32}$ of a grain at the outset, in combination with phenacetin, acetanilid, etc. (see composition of capsule, page 92), and, as has already been stated, after the first two weeks increase the dose gradually until the limit of its physiologic action is reached. The quantity of the other ingredients in the capsule remains about the same

except in the case of phenacetin and acetanilid, which are increased or diminished according to the degree of fever present. I may as well say that these two agents are not used here for the sole purpose of subduing the abnormal temperature, but I regard them as most useful supporting agents to the nervous system, and as being capable of enhancing the action of strychnine. I administer them, therefore, when fever is absent, although, as already intimated, in smaller doses than when fever is present. Hence, at the end of a course of three months' treatment of a case of phthisis, with fever of about 100° or 101° in the evening, the probable composition of the capsule will be the following:

℞.—Phenacetini } Acetanilidi }	. . .	āā ʒjss.
Quininæ sulphat.	. .	gr. xxxij.
Pulv. capsici.	. . .	gr. v.
Ammon. chlorid.	. . .	ʒj.
Strychninæ sulphat.	. . .	gr. ijss.
Atropinæ sulphat.	. . .	gr. $\frac{1}{25}$.—M.

Ft. capsulas no. xxxij.

Sig.—One capsule four times daily.

If fever is practically absent at that period, then a grain each of phenacetin and acetanilid is given, but the quantity of strychnine, as indicated in the foregoing capsule, is maintained. Phenacetin and acetanilid are believed to be injurious when given continuously for a long time, but of this, so far as I am able to judge from gross appearances, I have seen no evidence, even after administering them in large doses to the same individual for a period extending over a year. The most marked influence which follows the administration of this combination in the way described is seen in the diminution of cough and expectoration, in the increase of appetite and strength. In cases of alcoholic phthisis it is necessary to give the strychnine in larger doses than in non-alcoholics, and also increase it progressively. These patients also tolerate inordinate doses of capsicum with great benefit.

In connection with this internal medication it is, of course, understood that in order to succeed it must go hand-in-hand with well-regulated rest, nutritious food, pneumatic and electric treatment, sun-baths, massage, etc. Pulmonary phthisis is a complex constitutional and local disease, the cure of which is not vested in the influence of a specific agent, but in the application of material and forces which tend to augment and enhance the vital resistance of the body to disease.

LOCALIZATION IN DISEASES OF THE SPINAL CORD.[1]

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THE clinical study of diseases of the spinal cord has been given new impulse and placed upon a reliable scientific basis by the establishment of the principles of localization. Lesions can now be definitely estimated, and their importance properly assigned. To work out fully their extent, whether in the center or periphery of the cord, or limited to its columns, requires thorough acquaintance with the anatomy and physiology of the cord. Localization is but the correct interpretation of symptoms—motor, sensory, reflex, vasomotor, and trophic—arising in any case of spinal disease. It is to be noted that most diseases of the spinal cord are limited in area, and may involve but one segment or spinal unit. In actual disease, however, even if incipient, more than one segment is usually affected.

The motor symptom most prominent in spinal disease is diminished function or paralysis, although we do have symptoms of increased function, as shown in spasms cramps, and rigidity.

Paralysis of spinal origin may be caused by two distinct lesions: first, when voluntary impulses from the brain to the spinal motor centers are cut off, as in compression; secondly, when the spinal motor centers are destroyed (Starr), as in acute anterior poliomyelitis. The first type is not followed by atrophy, and the electric reaction is normal, while in the second, the paralysis is followed by more or less degenerative atrophy, and the electric reaction of degeneration is marked. Starr emphasizes the importance of separating these two forms of paralysis, because the line of treatment is determined by the condition found. In the first type surgical treatment may remove the cause of paralysis, while in the second nothing can be done.

By the use of electricity we can estimate the degree and distribution of the paralysis, and in this way assist in localizing the lesion. The diagnostic uses of electricity are, therefore, important, and the general rule of Bramwell should be borne in mind, viz.: "When the nutritive condition of muscles and nerves is not profoundly altered—that is, when the trophic-nerve nuclei, the motor nerves, and motor-nerve endings are healthy—the electric alterations are merely quantitative; when, on the contrary, the trophic-nerve nuclei are destroyed, when the trophic-nerve influence is shut off from the muscles by severe lesions of the peripheral nerves, when, in short, the peripheral motor nerves and motor-nerve endings are degenerated, qualitative alterations in the electric reactions, to which the term *the reaction of degeneration* has been applied by Erb, appear."

During the past week I met a case in which the alterations of degeneration, while present, yet required considerable time to work out their extent, and to localize the lesion, thus emphasizing the fact that it is only by observing the muscles, or groups of muscles, thus affected that we can localize the lesion. We must also call to our assistance the very valuable table of Starr, which is to be found in all recent works on diseases of the nervous system.

The sensory symptoms are localized by a study of the distribution of the posterior nerve-fibers and the character of the alterations of sensibility, such as temperature-perception, pain, anesthesia, hyperesthesia, etc., by means calculated to show the impairment of functions in the sensitive areas to be investigated.

The ability to localize sensibility depends greatly on the thoroughness of the tests used. "The point of chief

[1] Read before the Tri-State Medical Society, Keokuk, Iowa, April 4, 1893.

importance in testing sensation is to find some part of the patient's body which is unaffected, and with this part as a standard, to compare affected parts" (Starr). The sensory functions of the individual segments of the cord have been pretty thoroughly determined, so that by defining the area of surface affected we can determine the localization of the lesion.

In the study of the localized functions of the cord the level of origin of the nerves, their point of exit in relation to the spinous processes, and their final distribution, are of paramount importance. The diagram of Gowers, to be found in all standard works, shows the relationship of the vertebral and spinal segments and spinal nerves. The spinal nerves have their exit lower through the spinous processes than they arise in the cord, and as we descend the cord these lengths of the nerves increase before passing out of the canal, so that when we reach the end of the cord we find quite a bunch of nerves forming the cauda equina. We must bear in mind, therefore, that the lumbar nerves are not opposite the lumbar vertebræ, nor, in fact, are any of the spinal nerves directly opposite the vertebræ of the same name. This fact is of great importance in surgical diagnosis. Spinal lesions are generally bilateral, and especially so in sensory disturbances, although in what is termed Brown-Séquard's paralysis we find "paralysis of motion and muscle-sense on the same side as the lesion, while sensibility is paralyzed on the opposite side, pain and temperature being especially affected." Hyperesthesia and increased reflex action are noted on the side of the lesion.

Other primary considerations in the localization-study of diseases of the spinal cord are the reflexes. They show the condition of portions of the segment through which the reflex passes. To insure reflex action requires that the sensory or efferent fibers be intact, the ganglion-cell perfect, and the afferent or motor fibers preserved; this combination constitutes the reflex arc, and any interference with one or more of these essential elements, affects reflex action. Disease may destroy the lateral columns and posterio-internal columns without affecting reflex action. The reflex system of the spinal cord is made up of a series of these arcs or loops, and disease may affect one or more of them, being manifested either in increased or diminished action. Disease may not be indicated by the absence of a reflex, for through an idiosyncrasy in the physiologic make-up of a person it may be absent; again, disease outside of the cord may affect reflex action. Disease affecting special portions of the cord, as in locomotor ataxia, will destroy reflex action.

Excessive or increased reflex action is caused by disease that increases the irritability, and, consequently, diminishes the specific resistance of the arc in any part of its course, as excitability of gray matter from adjacent inflammatory disturbances, and then diseases which arrest conduction, as in diseases of the lateral columns, where both superficial and deep reflexes are affected.

The localization of reflex disturbances enables us to confirm motor and sensory symptoms. The superficial reflexes are the plantar, gluteal, cremasteric, abdominal, epigastric, and interscapular, each having local significance and importance.

The interscapular reflex embraces the seventh and eighth cervical and the first and second dorsal segments; the epigastric, the fourth to the seventh dorsal, inclusive; the abdominal, the eighth to the twelfth dorsal, inclusive; the cremasteric, the first to the third lumbar; the gluteal, the fourth and fifth lumbar; and the plantar, the first to the third sacral. These reflexes are obtained by gently irritating the skin with the point of a sharp instrument or with the finger.

The important deep reflexes are the patellar tendon-reflex and the ankle-clonus. The patellar tendon-reflex is obtained by striking the ligamentum patellæ while the knee is semi-flexed, or, as Buzzard recommends, by having the patient, who is seated, plant his foot firmly down at such a distance that the leg forms a little more than a right angle with the thigh, whilst the observer rests the palm of his left hand upon the patient's thigh, and with the right strikes the ligamentum patellæ about one-eighth of an inch below the knee-cap. The quadriceps muscle can be felt, and can be seen to contract more or less vigorously in response. If the patient is in bed, the knee should be flexed and the heel held firmly down upon the bedding whilst the blow is struck. The quadriceps will be seen to contract. If the phenomenon be absent, we must then endeavor to locate the interruption in the arc and ascertain its cause. If the patient can walk freely, and can flex and extend the leg with vigor, we may exclude the motor side of the arc. The most conspicuous illustration of a flaw on the sensory side is furnished by tabes dorsalis.

Trophic disturbances will cut off reflex action, as the seat of this influence is known to be in the large ganglion-cells which lie in the anterior horn. Interruption in this case may exist either in the anterior root outside the cord, the short portion within the cord, or in the anterior horn of gray matter itself.

As regards the second of these possibilities, nothing is certainly known that will enable us to localize the lesion in that particular portion of the anterior root.

Ankle-clonus is only present in case of disease, and it signifies that from some cause the inhibitory influence of the higher centers is no longer normally exercised. The natural impulses from above are somewhere interfered with. Sclerosis invading the antero-lateral columns interferes with nervous impulses travelling down this path, and ankle-clonus is marked. Changes in these columns, of several months' duration, are usually permanent, and so excessive a reflex as is represented in ankle-clonus means structural change that will be unalterable.

In spastic functional paraplegia we elicit ankle-clonus, but this is not necessarily an indication of chronicity, and in hysteria[1] we will find increased tendon-reflex. In the latter the cerebral influence is considerable, and this Buzzard thinks is sufficient to inhibit the nervous impulses reaching the spinal centers. The absence, then, of impulses downward through the lateral columns seems to result in an effect upon the tendon-reflex very similar to that occasioned by the resistance to their propagation through the columns which is interposed by the structural changes occurring in sclerosis.

[1] I use this term "hysteria" as differing from functional, according to Bastian, in his recent valuable contribution to the study of hysterical and functional paralysis.

The organic reflexes, viz., the vesical, rectal, and sexual, offer special and important considerations in the study of diseases of the spinal cord as factors in localization. They belong to the independent functions of the cord, and their action is not concerned in volition. Disease may affect each center separately, but usually they are simultaneously affected because of their location. These centers are situated in the lower portion of the cord, the genital centers reaching from the first to the third sacral segment, inclusive. The bladder and rectal centers extend from the fourth to the fifth sacral segment, inclusive. Starr says that they are adjacent to one another, and the sphincters are uncontrollable when the lesion involves the lower three sacral segments. The center then is probably in the two lower. Disease may affect these centers by excessive stimulation, and as a result both the bladder and rectum fail to act normally.

We may have incontinence or retention of urine: incontinence when there is excessive stimulation of the nerves, as in cystitis, and the presence of a foreign body in the bladder, or when, as in children, it is due to spasm of the bladder, or lack of tone of the sphincter. Retention is the result of paralysis, and localizes the lesion in the lumbar region. The rectum is similarly affected. We often note in spinal disease localized in the dorsal region that defecation and micturition are affected; that is, the functions are performed with normal regularity, but the control of the will over these functions is lost. I saw recently such a case. The bladder and rectal centers were unaffected, because they were not included in the diseased area, but, as the patient expressed it, he "could not hold his water, or control his passages," because of dorsal disease.

The sexual reflex controls erection and ejaculation, and is an important one. Impotence is due to destruction of this center, or to inhibition of it, by reason of general spinal weakness. By reason of the intimate nervous connection of the genito-urinary organs with the cerebro-spinal system, we may have nervous disturbances growing out of this reflex arc. The sensory portion of the arc is enormous; the conducting cords which attach the genital organs to the centers are highly developed.

Robinson says that "branches from the second and fourth sacral and the entire third sacral segment go to make up the enormous nerve-supply for such small organs as the genitals." The bladder and rectum also receive branches from this same supply, so that we find the action of the bladder, rectum, and genitals wonderfully harmonious.

In woman we note this dominating influence more than in man, for the great and complicated nerve-supply to the female genitals accounts for the danger of nervous complications and its stubborn pathology. Robinson says: "It may be laid down as a general proposition that the viscera have their normal function in rhythm and the disturbance of the rhythm is what induces disease." It may also be said that the main pathology of the sympathetic is reflex action from some distant viscus. All have noticed the close nervous connection of the genitals with the nervous system. In woman uterine disorders occasion a thousand and one ills, while in man the reflex irritation of disease completely upsets him. The whole spinal disorder is often purely reflex, and we must not overlook the rectum and genito-urinary organs as aids to diagnosis and localization.

Let us now outline the motor and sensory symptoms to be noticed in focal disease of the cord in various regions.

In the cervical region lesions above the fourth segment cause death by involvement of the phrenic nerve. Upper-arm motor symptoms, with disturbances of sensation of the entire trunk and arm, characterize involvement of the fifth and sixth cervical segments. Lower-arm motor symptoms, with disturbances of sensation of the trunk and inner surface of the arm and portions of the hand, denote involvement of the seventh and eighth cervical segments. The dorsal region gives the "girdle sensation" when the lesion is transverse, and this locates the level and determines the segment involved. The various levels are well outlined—the third rib corresponds to the third segment, the nipple to the fourth, while the sixth and seventh are regionally located by the distribution of nerves to the epigastrium; the tenth segment distribution is near the umbilicus, etc. The motor symptoms to be noticed are paralysis of the intercostal muscles in the upper dorsal lesions and the abdominal muscles in the lower.

Lumbar lesions may or may not involve the entire lumbar enlargement. When total anesthesia of the legs, thighs, and buttocks prevails, then the entire lumbar segment is involved. But if the upper portion is alone involved, then we find anesthesia of the thigh, outer portions of the groin, part of the scrotum, and paralysis of the muscles which flex the thigh, including also the sartorius muscle.

If the middle lumbar segments are alone involved, then we have anesthesia of the thigh and paralysis of the muscles which extend the knee and adduct the thigh. The sacral region is indicated by paralysis of the bladder and rectum in lesions extending as high as the fifth sacral segment. When the fourth and fifth sacral segments are involved we have paralysis of the peroneal muscles, and muscles of the leg and foot when higher. Herter says the area of anesthesia in sacral lesions is characteristic, extending from slight anesthesia about the coccyx in the fifth sacral involvement to the saddle-shaped area of the fourth segment, while in the upper segments strips of anesthesia on the back of the thigh, leg, and ankle to the sole and dorsum of the foot are noticed. Lesions of the cauda equina are diagnosticated by outlining the anesthesia, looking for deformities, and in the examination of the cord for purely cord symptoms.

Lesions in this region are due to pressure from fracture of the spine or dislocation, etc. As these cases are of surgical importance, localization should be carefully observed, so that the lesion may be removed. I recently saw a gentleman who had a fractured coccyx, causing pressure on the cauda equina. For eight years he went from sanitarium to sanitarium, seeking relief for spinal irritation and neurasthesia. He did not find relief until his case was found to be a surgical one; operation relieved him.

Again, I would call your attention to Starr's table in localizing the lesions, for by it and with the use of

electricity you can closely define regional location of the lesions in spinal-cord disease.

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CLINICAL MEMORANDA.

LONG-CONTINUED HEMORRHAGE IN THE LATTER HALF OF PREGNANCY, DUE TO DETACHMENT OF A NORMALLY SITUATED PLACENTA, AND ACCOMPANIED BY SEPTIC INTOXICATION: WITH A REPORT OF TWO CASES.

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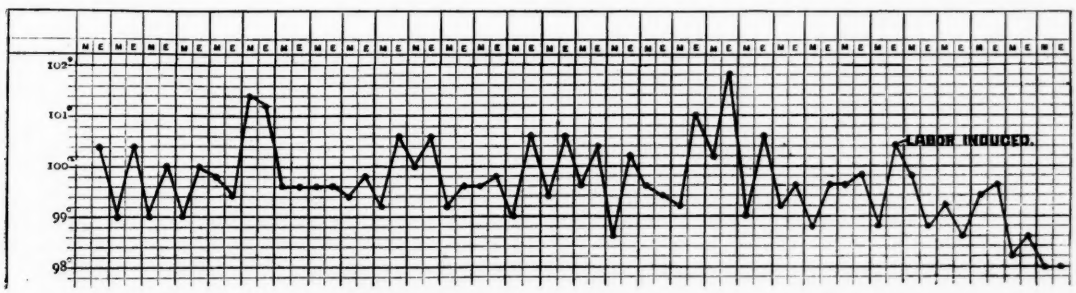
WHEN the practitioner thinks of accidental hemorrhage he usually has in mind a concealed hemorrhage of a very dangerous character, or possibly, a frank outpour of blood, soon ceasing spontaneously or followed by active uterine contraction, the explusion of the uterine contents, and the cessation of bleeding when the placenta is wholly detached and expelled. Premature detachment of the placenta is, indeed, commonly manifested in one of these two ways. Rarely, however, the detachment of a portion of a normally situated placenta is followed by a steady leakage of blood, continuing for weeks, resulting in the formation of a large blood-clot between the layers of the decidua vera, reaching from the lower margin of the placenta to the internal os, as the blood makes its way slowly from the site of hemorrhage to the orifice of the womb. This clot soon begins to undergo a slow decomposition; the products of this process are absorbed, and the woman develops a septic fever, which continues till the uterus is emptied. It is not likely that the general practitioner would be prepared for such cases unless he had happened to see and recognize one, for the text-books in common use among us take no account of them. The two examples here reported, occurring in my practice within the past year, demonstrate, however, the possibility of their occurrence:

CASE I.—I was called to a neighboring State some months ago to see a pregnant woman about six months advanced, who had been bleeding profusely from the genital passages for two or three weeks. The patient was profoundly reduced by the unceasing loss of blood, and when I saw her she had considerable fever, which had probably existed for some time. The physician in charge supposed that the blood was oozing from the cervix itself, and had consequently been painting the vaginal portion with Monsel's solution—naturally without success. An examination threw no light upon the nature of the hemorrhage. The os was slightly patulous, and the child was still alive. With the idea that there was a prematurely detached placenta, and in view of the woman's alarming condition, it was decided to terminate pregnancy without delay. On extracting the fetus, with its appendages, it was found from the tear in the membranes that the placenta had been attached at the fundus. Clinging to about a quarter of its maternal surface was a flattened mass of clotted blood, very dark in color and as firm in consistency as liver. It extended along the membranes to and beyond their point of rupture, the whole making a very large clot. The patient had symptoms of septicemia for a time after delivery, but ultimately recovered.

CASE II.—A. C., a domestic, was admitted to the Philadelphia Hospital in the sixth month of pregnancy. Two weeks before admission she had begun to bleed from the vagina without ascertainable cause. The hemorrhage continued without intermission and in increasing amount, so that she was compelled to go to bed, and thus came to the hospital. She was found to have fever,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ceeded to evacuate the uterus, although the fetus was still alive. The placenta was attached at the fundus. About one-eighth of its surface had obviously become detached some time before (shown by degeneration). To this margin was attached, as in the first case, a long, flat mass of firmly clotted blood, undergoing decomposition. The fever subsided a day or two after delivery, and the woman made a good recovery.

A surprising feature in these cases is the continuance of pregnancy in spite of a partially detached placenta and a huge mass of decomposing blood-clot lying between the membranes and the uterine wall. The appropriate treatment is undoubtedly the evacuation of the uterus. In the first case this was delayed too long, and the patient made a narrow escape. In the second case, I was curious to see how long pregnancy could continue in spite of such unfavorable conditions. I waited, therefore, as long as I dared, half expecting a spontaneous evacuation of the womb at any time, and keeping the patient under constant supervision, prepared to interfere at once should threatening symptoms develop.

248 SOUTH SEVENTEENTH STREET.

THERAPEUTIC NOTES.

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III.

CODEINE SULPHATE.

CURRENT literature would seem to indicate that resort to codeine is more common in Europe than in America; yet those American physicians who have had large experience with both morphine and codeine agree with their trans-Atlantic colleagues in preferring the latter under many circumstances. The dose of codeine laid down in most of the text-books is too large. While the drug may safely be given, if necessary, in doses of from two to six grains, on the basis that its narcotic power is but one-fourth that of morphine, yet, in medicinal usage its dose need not ordinarily be greater than would be the dose of morphine used in the same conditions. I frequently give $\frac{1}{16}$ grain, and rarely exceed $\frac{1}{2}$ grain. The drug should, however, be repeated much more frequently than would be safe with morphine; and one of the advantages of codeine over morphine lies in this safety of frequent repetition. The greatest advantage of codeine over morphine, however, lies in the facts that it is less likely to excite a morbid drug-habit; and that in the unfortunate cases in which its long-continued use becomes necessary, it does not give rise to the distressing results that a corresponding use of morphine often entails. It has thus been used in an endeavor to cure the morphine-habit. As compared with morphine, the sedative and hypnotic effects of codeine are greater, its anodyne and narcotic effects less. In addition, it appears from clinical data to have a special influence upon inflammations of serous membranes, and thus to be useful in checking the spread of pleuritis and peritonitis. Its power to diminish the excretion, and presumably the morbid production, of sugar in cases of diabetes mellitus is well established. Upon the normal secretions its effect is less marked than that of morphine, and in moderate doses constipation, dryness of the throat, diminution of urine, and of perspiration, are not usually produced.

In most of the conditions in which morphine is ordinarily employed, except when it is desired to promptly cause sleep or lessen pain by hypodermatic injection, codeine is to be preferred.

When it is considered advisable to add an opiate to a cough mixture, codeine sulphate may be given in doses of from $\frac{1}{16}$ to $\frac{1}{4}$ grain. Thus, in cases of acute or subacute catarrh of the laryngo-tracheo-bronchial tract, in which there is irritability of the inflamed mucous membrane, leading to more frequent cough than is necessary for the expulsion of morbid products, ten or fifteen grains of ammonium chlorid, with from $\frac{1}{12}$ to $\frac{1}{8}$ grain of codeine sulphate, may be given every two, three, or four hours. When a patient, as a busy man, finds it inconvenient to carry a liquid mixture, this prescription may be made into a mass with powdered extract of licorice and acacia, and dispensed in capsule. A little water should be swallowed with or after the capsule. Another quite useful combination in the catarrhal affections of influenza, in cases of ordinary bronchitis, and in cases of broncho-pneumonia due to exposure especially when there is an associated pleuritis, is the following:

Phenol salicylate, or cinchonidine salicylate	from	3 to 5 grains.
Terpin hydrate . .	"	3 to 5 "
Codeine sulphate . .	"	$\frac{1}{12}$ to $\frac{1}{8}$ grain.

Mix. Dispense in capsule.

Dose: One capsule with water every two to four hours.

This, or a similar prescription, is likewise beneficial in the "colds," bronchitic, pneumonitic, and pleuritic, that often retard recovery or cause "set-backs" in cases of pulmonary tuberculosis improving, or apparently well, under hygienic and other appropriate treatment. In simple pleurisies and in rheumatic pleurisies the terpin hydrate may be omitted. In the cough of pulmonary tuberculosis and other chronic conditions, when a sedative is indicated, codeine is always preferable to morphine. It is best given alone in tablets of $\frac{1}{8}$ grain each, the frequency of repetition being governed by the effect. Often one tablet at bedtime, or one early in the evening and another at bedtime, will be sufficient.

In acute tuberculosis codeine is a useful palliative. In tuberculosis and other painful affections of the pharynx and larynx, lozenges containing about $\frac{1}{8}$ grain of codeine in fruit-jelly, mallow, Irish or Iceland moss, or other demulcent, are often soothing and anodyne. In some cases cocaine may be added to such a lozenge.

In my own experience, codeine has not been equal to morphine as an analgesic in neuralgia; but on the other hand, when the pain has been traceable to inflammation, whether of nerve structures or other tissues, codeine has seemed the better agent. When used to control pain it should be given in larger doses than have thus far been spoken of, *i. e.*, from $\frac{1}{4}$ to $\frac{1}{2}$ grain, repeated at intervals of from fifteen to thirty minutes, until effective, either in relieving pain or causing sleep, or until four or six grains have been taken.

In the sleeplessness and headache of acute fevers, codeine may be given in doses of from $\frac{1}{2}$ to 2 grains, repeated every half-hour, every hour, or every second

hour, according to indications. If sleep is not produced by six grains, the drug should be abandoned.

In chronic insomnia of various causation, codeine may be employed in the manner advised for acute cases, or small doses may be given during the day, and one or two full doses at night. If its use is determined upon, it should not be abandoned until a sufficiently long trial had proved its ineffectiveness. It produces a sleep more nearly natural than that of morphine, and the after-effects are not unpleasant. Many alienists commend it highly. In the pains of visceral carcinoma and other hopeless affections, it may be tried before resorting to morphine, and will in many cases be found efficient.

In diabetes it is best administered with hydrogen dioxid, and should be given in ascending doses, being maintained at the point which, with least discomfort to the patient, lessens in the greatest degree the excretion of sugar. The determination of this point is a matter of careful observation and discriminating judgment in the individual case; and all the subjective and objective symptoms must be considered. Some patients do fairly well on a grain or two in the twenty-four hours, while others require six or more grains. While life is usually prolonged, and comfort much promoted, we cannot as yet regard the drug as more than a palliative; yet, recovery sometimes takes place apparently under the influence of codeine. Some patients who exhibit idiosyncrasies to morphine can take codeine with impunity, but this is by no means the rule, and inquiry must be made, and due caution exercised.

A CASE OF VOMITING OF PREGNANCY, RESULTING IN THE INDUCTION OF ABORTION.[1]

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IN presenting the history of this case, it is not because of anything atypical in its clinical course, but rather to emphasize some of the methods of treatment that may be of value in the management of such cases.

Mrs. J., thirty-five years old, tertipara, bore her first child in 1887, her second in 1890. She menstruated first at fourteen, and has since been regular, the flow lasting four or five days, though small in amount. Great pain preceded and accompanied the flow. The woman was of neurotic temperament. She last menstruated November 27, 1892, the flow lasting three days, and being about normal in amount. A slight show was noticed December 25, 1892, and again January 22, 1893. Upon December 26th, when gestation had progressed about four weeks, nausea and vomiting began and continued to a greater or less extent until March 13, 1893. At no time during this period was solid food taken. The emaciation was rapid and progressive, though for periods of from twelve to twenty-four hours the patient would retain small quantities of liquid food, only to be followed by nausea, retching, or the vomiting of bloody mucus, sometimes bile-stained and containing what appeared to be gangrenous masses. All treatment usual in such cases, such as dietetic measures, cocaine, chloral, argentic oxid, morphine, calomel, cerium oxalate, etc., was used without avail.

On March 5th I was asked to see the patient in consultation. She was emaciated, pale, almost cadaveric in appearance, and very nervous. The pulse was 120, small, though wiry, varying from 130 to 140 under the least excitement. She had been confined to her bed for six weeks, vomiting almost constantly, not only everything that was ingested, but also the mucous secretion of the stomach, which was often streaked with blood, together with the gangrenous masses already spoken of. There was a point of exquisite tenderness in the median line in the epigastrium.

Upon bimanual examination I found a uterine tumor about one and one-half inches above the pubes. The uterus was greatly anteflexed, the cervix softened; the bellying of the lower anterior segment was easily recognized, and the canal was somewhat patulous. Neither subjective nor objective fetal movements had been appreciated, but intermittent uterine contractions could be elicited in the usual manner. After this examination I had no hesitancy in saying that the woman was pregnant, notwithstanding the behavior of her menses. I advised that everything, solids, fluids, etc., be withheld from the stomach, and that rectal alimentation be resorted to. I applied a twenty per cent. cocaine solution freely to the portio vaginalis and within the cervix, at the same time introducing my finger to the os internum, after the method of Copeman. This treatment was rigorously carried out for seven days without success, the patient getting progressively worse. Upon March 12th, with counsel, Dr. Cox induced labor by the introduction of ʒj of sterilized glycerin between the membranes. At 6 P.M. of the same day, pains set in, but were insufficient. The membranes ruptured and the bleeding became annoying, though as yet not dangerous. With each pain there was retching, and oftentimes emesis. By 5 A.M. of March 13th the patient was in such an alarming condition from continued loss of blood that Dr. Donaghue was asked to see the case. He immediately tamponed the vagina tightly with iodoform-gauze, thus relieving the hemorrhage. The woman's temperature at this time was 102.2°, her pulse varying from 145 to 160, and being weak, almost imperceptible, and often intermitting.

At 9.30 A.M. I again met Drs. Cox and Donaghue in consultation. The woman's temperature was now 103°, her pulse 170 and almost imperceptible at the wrist. The respirations were sighing in character; the face was blanched, the eyes fixed, the surface cold. Before undertaking operative measures I injected Oj of a normal salt solution at 100° F. into the rectum, most of which was retained, and ʒiv of the same solution into the loose connective tissue below the clavicle on either side. The pulse almost immediately improved in character and volume. Two hypodermatic injections of ♏xx each of tincture of digitalis were also given.

Then, under chloroform, after thoroughly disinfecting hands, parts, and instruments, I emptied the uterus of a pair of four months' male twins, with one placenta. The uterus and vagina were immediately tamponed with iodoform-gauze to prevent further hemorrhage. The patient was in such a critical condition from acute

[1] Read before the Long Island Medical Society, May 4, 1893.

anemia that hypodermatic injections of digitalis, whiskey, and ammonia were resorted to; she was additionally placed in bed, with the hips elevated, and a pint of normal saline solution at 100° F. was injected into the subcutaneous tissue between the scapulæ. The reaction was prompt and satisfactory. The nausea and vomiting immediately ceased with the evacuation of the uterus, and small quantities of champagne were retained. The convalescence, though slow, was entirely satisfactory under the use of stimulants, tonics, and electricity.

As to the management of these cases, induction of abortion is often resorted to before all other methods have been exhausted. In two other cases in which I was consulted, abortion was contemplated, but the woman was saved by rectal alimentation and the introduction of a solid stick of argentic nitrate into the cervix to the os internum. This plan has been more satisfactory in my hands than Copeman's dilatation or the application of cocaine to the cervix.

In my opinion the vomiting in this case was due to the extreme anteflexion of the uterus and the neurotic temperament of the patient.

An interesting fact first brought to my attention by Dr. King, of Washington, is illustrated in the following history. Mrs. S., twenty years old, pregnant two and one-half months, applied to me for relief from distressing vomiting, which the usual therapeutic methods had failed to check. Upon close questioning I elicited the fact that she was having coition at least three times a week. I placed her upon wine-glassful doses of magnesium citrate, and left, with her promise to abstain from intercourse. The improvement was prompt and marked, so much so that, at the end of a week, feeling perfectly well, she again permitted coition, and the vomiting immediately returned, ceasing at once upon abstinence from that unphysiologic practice.

Since then I have had two marked instances of coition during pregnancy acting as the exciting cause of vomiting.

HYPERTROPHIC RHINITIS, PRODUCING OCULAR ASTHENOPIA.[1]

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USUALLY the treatment of asthenopia is a matter of very little difficulty to the surgeon, but there are now and again cases that seem to baffle every effort. I write with the object of calling your attention to a frequently overlooked factor in these cases.

The condition *sine qua non* is that the refraction shall have been thoroughly and efficiently estimated and corrected, and yet relief does not follow. In many such cases an intelligent observation of the nares will explain the mystery. We are all aware of the varied reflex neuroses attributed to pathologic conditions of the upper respiratory tract. Hack[2] ten years ago called attention to supra-orbital and ciliary neuralgia due to nasal troubles. He says: "Apparently unimportant lesions, without special symptoms pointing to the nose, may run their course, accompanied by serious reflex neuroses. Certainly all such neuroses do not have their origin in the nose; but when they do, their relief through surgery is most marked." Götze relates that in Rossbach's clinic, among many other reflex symptoms abolished by reduction of the middle turbinates, were ciliary neuralgia and migraine. Schreiber, Bresgen, Schech, Chiari, Heymann have also related many such instances. Grüning says, in reporting on the same subject, that notwithstanding proper attention to the ocular affection, it remained uncured till the nose was treated, even though no special symptom called attention to this organ.

We readily see the intimate connection between these two organs when we remember that the nervous supply of the nasal cavity comes mainly from the nasal branch of the ophthalmic nerve, which, early in its course, as it crosses the optic nerve, gives off two or three small twigs, the long ciliary nerves, which, joining with the short ciliary nerves from the ciliary ganglion, pierce the sclerotic, and running forward between it and the choroid, are distributed to the ciliary muscle and the iris.

In the following cases I have no hesitation in saying that the refractive error was thoroughly corrected, yet the permanent relief only came through reduction of the hypertrophied turbinates. My attention was first directed to this condition by some remarks of Mr. Lennox Browne, made upon a case which he was treating for ciliary neuralgia.

CASE I.—Mrs. M., thirty-two years of age, a pale, nervous woman, with a history of tuberculosis in her family, was sent by her physician for treatment for asthenopia. Any prolonged effort at sewing or reading brought on excessive pain and fainty feelings.

V. = R. E., 6/v? L. E., 6/vi? H. manifest, R. E., + sph. 1.25 D; L. E., + sph. 1.50 D.

The ophthalmoscopic examination (seen with + 1.50 D) showed the fundi normal.

By retinoscopy, under homatropine, I found + sph. 1.50 D.

I estimated the refraction to be as follows:

R. E., + sph. 1. D ⊃ + cyl. 0.25 D, ax. 90° = 6/vi.

L. E., + sph. 0.75 D ⊃ + cyl. 0.75 D, ax. 90° = 6/vi.

I then ordered these lenses, which she wore persistently. In a month she returned, complaining that she had no relief. I went over the examination again, and got the same results. I then reduced the strength of the glasses in various ways, but without any permanently good effect. During the visits the statement was made that she had had some catarrhal troubles some years ago, which had been successfully treated, she said, by Dr. Arnold, now of San Francisco. On examination, the middle turbinated bodies were found firmly impacted between the septum and the outer wall of the nares. On palpation, they were found to be excessively sensitive, and gave her the same pain experienced in prolonged usage of the eyes. She also complained of dryness of the throat. The mucous membrane of the pharynx was in a state of granular degeneration. Cauterization of the turbinates with the electro-cautery and chromic acid and application of Schech's iodin solution to the pharynx soon brought about a change. She now uses her eyes

[1] Read before the Section on Ophthalmology, Otology, and Laryngology of the Maryland Medical and Chirurgical Faculty, April 27, 1893.

[2] Hack: "Reflex Neurosen und Nasenleiden," Berlin. klin. Wochenschr., 1882.

with comfort, wearing convex cylinders only for the refraction error. I may say that no muscular imbalance worthy of correction could be discovered.

CASE II.—Mrs. B., thirty-eight years of age, a robust woman, not of a nervous temperament, complained of asthenopia, which had not been successfully treated. On examination, I found mixed astigmatism, and no esophoria or exophoria, but hyperphoria of 2°. Examination showed the discs to be elongated and bounded by a small temporal crescent. The macular reflex was normal, as well as other portions of the background. I ordered:

R. E., + sph. 1. D ⌒ — cyl. 2. D, ax. 80°.
L. E., + sph. 1.25 D ⌒ — cyl. 2.25 D, ax. 80°.

These glasses were worn with greater comfort than she had yet obtained. She returned in three months, saying that although much better, she still did not have absolute comfort. Thinking to correct the hyperphoria, I made the necessary examination, but could not now discover it. I examined the nose and found the same condition of the middle turbinates as in the case first reported, with secondary involvement of the pharynx. These conditions were treated in the usual manner, with absolute relief of all symptoms.

A third case, in the wife of a prominent physician, there was compound hypermetropic astigmatism of one eye and a low degree of simple myopia of the other, has thus far had no relief from any glass I could give her. She has, besides the refractive error, 3° right esophoria and 4° left; but no hyperphoria. The patient is of a very high-strung, nervous temperament, and very little could be accomplished at any one stitting. I examined the nose and found hypertrophic rhinitis and the pharnyx secondarily involved. The slightest touch of the wool-covered probe induced intense pain in the orbital and supra-orbital regions. Treatment of the nose was begun, but was interrupted by an intercurrent attack of illness. There is not a shadow of doubt in my mind that the main cause for her asthenopia will be found in the nasal cavity.

I wish to indorse the conclusions of Dr. de Schweinitz in his article on the subject in THE MEDICAL NEWS of April 2, 1892, to which I would refer the reader.

218 W. FRANKLIN ST.

MEDICAL PROGRESS.

Successful Unilateral Laryngectomy for Carcinoma.—MONKS (*Annals of Surgery*, vol. xviii, No. 1, p. 18) has reported the case of a photographer, thirty-nine years old, who had been hoarse for about a year and presented thickening and redness of the right vocal band, with decided limitation of movement during respiration and phonaton. The man otherwise appeared quite well and strong. There had never been much marked pain in the throat or difficulty in swallowing, and there was no cachexia; neither was there a family history of carcinoma. The growth was apparently confined to one side of the larynx and no enlargement of the cervical glands could be detected. Other measures failing to afford relief, operation was deemed justifiable. Accordingly, a vertical incision was made in the median line, from the hyoid bone to about an inch and a half below the cricoid cartilage; and at right angles to the first, a second incision, upon the right side of the neck, at about the level of the lower border of the thyroid cartilage. After the thyroid and cricoid cartilages on the right side had been laid bare the adjacent right half of the back of the cricoid was separated from the anterior wall of the esophagus, so that after the operation was finished the esophageal wall might be left intact as high as possible, and the liability to regurgitation of food diminished. The trachea was opened at the lowest part of the wound, just below the cricoid cartilage, and a large-sized silver tracheotomy-tube inserted. The whole larynx was then split in front, in the median line, and the two halves held apart while gauze was packed firmly into the lowest part of the cavity upon the tracheotomy-tube. The entire right half of the larynx was now removed, the incisions beginning from below. The right half of the trachea was first divided just below the cricoid cartilage; then, with the knife within the larynx, the posterior part of the cricoid cartilage was split vertically in the median line. The thyroid cartilage was next carefully separated from its attachments to the soft parts behind and the thyro-hyoid membrane was divided. Lastly, the superior cornu of the thyroid cartilage was pulled down and excised. In this way the entire right half of the larynx was removed, including one-half of the thyroid and cricoid cartilages, the crico-thyroid membrane, the right arytenoid cartilage, the right vocal band and other soft parts. As much as possible of the epiglottis was permitted to remain. A portion of the growth, which had extended across the median line in front, was additionally removed. Through the upper part of the wound, which communicated with the pharynx and esophagus, a large-sized soft-rubber stomach-tube was introduced well down into the esophagus. Around the tube iodoform-gauze was packed and the edges of skin approximated by silk sutures. Histologic examination of the specimen disclosed the structure of epithelioma. After the lapse of twenty-four hours a catheter was substituted for the stomach-tube in the esophagus, liquid nourishment being thus administered. A glass tube, surrounded by an inflated rubber jacket, was likewise substituted for the silver tube in the trachea. This was removed permanently on the fifth day. On the ninth day bits of beefsteak were chewed and swallowed with evident relish, but the catheter was continued for liquids. On the tenth day the patient sat up in a chair for a while, and was able to speak in a whisper by closing the opening in the neck. Subsequently, as the opening manifested a tendency to close, an ordinary tube was placed in the tracheal wound. Soon after leaving the hospital the patient was able to swallow liquids without the presence of the tube and without regurgitation, by exercising slight pressure upon the opening in the esophagus. The patient was well a year after the operation and engaged in his previous occupation. The tube was worn constantly, being held in place by tapes, and its outer opening closed by a cork.

Nocturnal Laryngeal Spasm in an Adult.—HERSCHELL (*Lancet*, No. 3637, p. 1129) has reported the case of a literary man, thirty-six old, of markedly neurasthenic temperament, who for eighteen months had suffered from attacks of spasm of the larynx at night. At first these occurred about twice a week, on some nights two attacks taking place. Under appropriate treatment the

attacks ceased for a time, but returned upon relaxation of hygienic measures. The attacks usually occurred after late dinners and over-indulgence in cigars. They set in about 2 o'clock in the morning, when the man is awakened with a sense of suffocation, from spasm of the larynx, which prevents inspiration. This continues for a few seconds, when the spasm partially relaxes and air is drawn into the larynx with a crowing sound. After nearly a minute the spasm entirely relaxes, but the larynx feels sore and uncomfortable for an hour or two. During the attack the heart beats violently, while afterward the stomach is found tympanitic and distended. Eructation of gas is followed by relief and brings the attack to an end. Often there appears a spasmodic condition of the orifices of the stomach, which prevents the expulsion of the flatus upward or downward. There was no evidence of disease of the heart, vessels, or nervous system.

Parotiditis Complicated by Orchitis, Prostatitis, and Hemoptysis.—COMBY (*L'Union Médicale*, No. 61, p. 725) has reported the case of a gardener, twenty-nine years old, who, after having worked all day in a hot-house, was seized at night with a chill; the right testicle was noted to be swollen, red, heavy, and painful. During the night there occurred sweats, with headache, pain in the back and in the extremities, so that sleep was prevented. There was also evidence of the existence a mild prostatitis. On the following day delirium set in, and a day later still painful swelling appeared in both parotid regions. There were fever and dyspnea, and in the midst of a paroxysm of coughing, profuse hemoptysis occurred. Improvement now soon set in, and in a short time the man was convalescent. Examination of the chest failed to disclose evidence of organic disease; neither did the urine present any abnormality. The treatment employed consisted in the administration of quinine sulphate, purgation, the application of emollient compresses to the testicle, and a milk-diet.

Ulceration of the Mouth, of Tabetic Origin.—At a recent meeting of the Paris Society for Dermatology and Syphilography, HUDELO (*Internat. klin. Rundschau*, 1893, No. 25, p. 942) demonstrated a tabetic who presented two areas of ulceration of the mouth corresponding with the left inferior maxillary nerve and the right superior maxillary nerve. The affection had set in a year previously, and began with a painless loss of the teeth, after which the ulcers formed. There was nothing in the family history to explain the occurrence; there was also no history of phosphorus-poisoning; and, although the man had had syphilis, the ulcers did not present the appearances or pursue the course of syphilitic lesions. The ulceration was considered as related to the posterior sclerosis and to be dependent upon an inflammation of the fifth pair of cranial nerves. The skin of the face and the mucous membrane of the mouth were anesthetic.

THERAPEUTIC NOTES.

The Treatment of Inebriety.—At the Twelfth Congress for Internal Medicine, recently held at Wiesbaden, SMITH (Supplement to *Centralbl. f. klin. Medicin*, 1893, No. 25, p. 90) pointed out that the stage at which chronic alcoholism usually comes under the observation of the physician presents two distinct features: (1) A psychic degeneration and depravity, affecting the character, with an extinction of all energy, so that it is impossible for the victim, from his own resources, to rid himself of his condition—inebriety proper; and (2) a series of organic and systemic changes engendered by, but not peculiar to, the alcoholic poison, and the symptoms of which are referable to demonstrable pathologic changes. In view of the psychic condition, it is essential that the patient be placed in an institution devoted solely to the treatment of inebriety. Such an establishment should be situated in the country and isolated from all external communication. It should be under the care of a physician, in whose family the use of alcohol in any form should be rigidly proscribed. There should be no actual restraint, but the most vigilant supervision should be exercised. The institution should be equipped with apparatus for Swedish resistance gymnastics, and opportunities should be afforded for light and useful occupation, such as wood-turning. To be efficient and permanent, the treatment must be continued for a period of from six to twelve months, and in cases of periodic inebriety and other severe varieties for eighteen months. Of the whole number of cases under treatment at Marbach 30 per cent. were cured; of those that remained under treatment for more than six months the proportion of recoveries was 80 per cent. The essential element of treatment is immediate and rigid abstinence. Should manifestations of delirium and collapse appear camphor should be given. After several months of treatment the character of the patient will have changed for the better. Upon dismissal, his future associations should receive thoughtful consideration. Such incurable conditions as alcoholic dementia, alcoholic paranoia, and profound alcoholic mania will necessitate detention in an insane asylum, as well as such cases in which the alcoholism is but a manifestation of moral irresponsibility. Among the curable conditions in which degenerative changes in the central nervous system have taken place may be included alcoholic melancholia, pseudo-paralysis, and pseudo-tabes. Epilepsy and periodic inebriety, however, require treatment of especially long duration.

For Asthma.—

℞.—Potassii iodidi . . . . . ℥ss.
Potassii chlorat. . . . . ℥j.
Tinct. lobeliæ . . . . . f℥j.
Syrup. diacodii . . . . . f℥j.
Aquæ . . . . . f℥iv.—M.

S.—A tablespoonful every hour.

Rif. Med.; Münch. med. Woch.

For the Cough of Pertussis.—

℞.—Ext. belladonnæ . . . gr. j.
Aluminis . . . . . ℥ss.
Syrup. zingiberis, Syrup. acaciæ, Aquæ } . . āā f℥j.—M.

S.—A teaspoonful thrice daily, or when the cough is distressing.

The Practitioner.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JULY 22, 1893.

MEDICAL MEN IN UNIVERSITY SETTLEMENTS.

THE United States Department of Labor is investigating the condition of the slums of Chicago. Officially the term "slums of Chicago" is applied to about a half a square mile of the city, bounded by State, Twelfth, Halsted, and Polk Streets. The investigation of this section includes a plan made to a scale of every floor of every tenement and inhabited building, and a thorough census of the inhabitants themselves. This district has been found to contain 16,000 residents, and the plans show four bath-tubs. Two of these bath-tubs, however, are disconnected from the water-supply. In this district and in the regions immediately surrounding it there are no public baths.

When such conditions come to light a picture of probable concomitant conditions immediately flashes upon the mind of the physician whose practice has made him familiar with such neighborhoods. In this particular case, we reflect that about one-third of the clothing manufactured in Chicago is made in the "sweat-shops" in this neighborhood. We remember that a great part of the "scab cigars" (*i.e.*, those not made in union shops) are made in these dirty tenements by the unwashed inhabitants. Here live a great proportion of the rag-pickers of the city, and here they house their merchandise. In one of these tenements, a year ago last winter, in a room twelve by eighteen feet, a family of six worked, cooked, and slept while they finished a lot of knee-pants. The whole family worked almost day and night for four days in order to finish a job and get money to pay for the burial of a child that had lain all of that time on a pile of stock in one corner, dead of scarlet-fever. In one of these tenements, where sixty-two women and children live on three floors, forty-nine men sleep in a basement twenty-five by ninety feet. This cellar has three windows, two in one end and one in the other, only two of which can be opened.

It is difficult for the physician to do what may seem to him his duty in the light of such conditions as these, to be found in all of our large cities. He may be indifferent to, wilfully ignorant, or negligent of these hotbeds of physical and mental disease and distress. He may take these woes to heart, and work in a small way to stop the overflowing tide of misery and suffering that he sees damming up against the future. He may, besides, inquire into the etiology, the course, and the treatment of the social and the economic malady of which these sad conditions are symptoms. He may look into the diseases of other communities and other times, and consider the result of effort to relieve, tried elsewhere. The young, philanthropic physician, the prophet who has studied medicine for love of man, cannot find a richer field for work and study than the slums of our great cities. Asia is not so inexhaustible, Africa is not so dark, and Oceanica is not so monotonous as these deserts of human life, hope, and health. The way for knowledge and good seems to be opened in the "University Settlements," in quiet, unostentatious life, work, and study among these unfortunate and hopeless people. The efforts that have been made in this direction have been made almost entirely without the aid of physicians. In the few settlements in this country there is no physician. No other resident, we believe, could so easily earn his living while at work, yet the prophet has not appeared. When he does come he will be an officer of the department of Health; he will attend the dependent and needy poor; he will help to secure the enforcement of the tenement-house laws and the factory laws; he will instruct the poor in the care of the house, and the choice of food, and in the care of the body; he will help the sick, and by means of coöperative organizations, provide for women in approaching confinement; he will study and record

the conditions and tendencies he finds in his daily occupation, and report them through proper channels; he will try to bring the knowledge of the condition of tenants to the minds of landlords and landladies, and secure some betterment of properties; and, when other means fail, he will aim to secure laws to compel humane treatment of man by man.

THE MEDICAL CORPS OF THE UNITED STATES ARMY.

IN the overcrowded condition of the profession, together with the resultant limitation of opportunity in private practice, the recent graduate in medicine will find much to attract him to the Medical Corps of the United States Army. The standard of requirements is of course elevated, and the appointment is, therefore, the more highly to be prized. Recent innovations, to which allusion has already been made (THE NEWS, July 8, 1893, p. 51), have, besides, greatly elevated the desirability of the positions in the Corps.

In the organization of the Army Medical School four professors will be selected from among the senior medical officers of the army stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses, microscopic technic, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of:

1. A *President of the Faculty*, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights, and privileges, customs of service, etc.).

2. A *Professor of Military Surgery* (including the care and transportation of wounded).

3. A *Professor of Military Hygiene* (including practical instruction in the examination of air, water, food, and clothing from a sanitary point of view).

4. A *Professor of Clinical and Sanitary Microscopy* (including bacteriology and urinology).

The position in the Medical Corps is a most honorable one. The pay and emoluments are quite reasonable, while original investigation and study relating to scientific medicine or hygiene will receive due encouragement.

There are at present five vacancies in the Corps, and five more will occur within a year. To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education" by a medical officer of the army stationed most conveniently for this purpose. This will enable those who would be rejected on account of physical defects, or whose preliminary education is unsatisfactory, to ascertain the fact without going to the expense of visiting a distant city for the examination, and will save them the humiliation of being known at home as rejected candidates. It will also diminish the number of rejections by the board. There has been a mistaken idea, due to the large number of rejections, that the examination is unreasonably severe; as a matter of fact this is not the case, and the considerable number of rejections has been due to the fact that a large number of applicants have been men whose English education was defective and who have appeared before the board without having made any special preparation for the examination in professional branches.

A BUREAU OF PUBLIC HEALTH.

UNITED effort on the part of the medical profession seems likely to lead to the establishment of a Bureau of Public Health, of the necessity of which the recent cholera-scare must surely have furnished sufficient demonstration. It is not alone, however, for imported disease that some central form of health-organization is absolutely necessary, but also to secure uniformity and harmony, and thus greater efficiency, of action with regard to measures for the prophylaxis and management of disease within our borders. The American Medical Association has created a committee which is charged with the duty of promoting the establishment of a Bureau of Health, and now a sub-committee of the National Quarantine Committee of the New York Academy of Medicine has been instructed to prepare a bill, to be submitted to Congress, creating a Public Health Organization in the General Government. With a view of harmonizing conflicting opinions as to the plan of organization, and in order to concentrate upon a single measure the efforts of all interested in securing the necessary legislation, the committee has

prepared the sections of a bill organizing a Bureau of Public Health, which is tentatively submitted for the purpose of eliciting a full and free discussion of the subject before the precise form to be adopted is finally decided upon. The bill provides for the grouping of the States and Territories into nine sanitary districts, and the establishment of a commission of fifteen, of whom eleven are to be appointed by the President, one from each district, and two at large, the other four members to be the Surgeon-General of the Army, the Surgeon-General of the Navy, the Supervising Surgeon-General of the Marine-Hospital Service, and an officer, learned in the law, detailed by the Attorney-General from the Department of Justice. Argument seems superfluous. A Bureau of Public Health is indispensable to the welfare of the country. This once admitted, the details of organization and execution will demand separate consideration.

EDITORIAL COMMENTS.

Albuminuria as a Result of the Act of Parturition.—Modern obstetrics has done much to clear up the pathology of the gravid, parturient, and puerperal conditions. Perhaps the greatest amount of discussion has centered about the condition that for want of a better name is called eclampsia. A knowledge of the etiology of this condition would practically mean also a recognition of the means of its prevention and treatment. Many clinicians admit that there may be a physiologic albuminuria, as, for instance, after the taking of albuminous food and after active physical exercise. Recent observations by AUFRECHT and FRIEDEBERG (*Centralblatt für klinische Medicin*, 1893, No. 22, p. 457) demonstrate that transient albuminuria may occur in women as a result of the act of parturition. The observations were made upon healthy puerpera, free from gonorrheal infection, and were conducted as follows: The urine was examined in the usual manner before the onset of labor. In case the woman was in labor at the time of entrance into the hospital and was unable to spontaneously evacuate the bladder, the urine was withdrawn by means of the catheter, the most scrupulous aseptic precautions being observed. The urine was withdrawn by catheter at the conclusion of labor and again examined. In cases in which the urine presented any abnormality the examination was repeated twenty-four hours after the conclusion of labor. Thirty-two puerperal women were examined in the manner outlined. In none did the urine contain albumin before the occurrence of labor. In eighteen, however, albumin was found after labor in varying proportion; in none were tube-casts found, and in but one a small number of red-blood corpuscles. It thus seems reasonable to infer that the albuminuria is a result of the activity of labor, perhaps through venous stasis from the pressure upon the abdominal viscera and forced expiration with closed glottis. The practical lesson to be learned is that the urine should be faithfully and repeatedly examined immediately before labor, and, if albumin be present, that untoward symptoms should be carefully looked for, on the appearance of which the labor should be terminated as quickly as possible. This injunction applies with special emphasis if eclampsia (which is almost invariably associated with albuminuria) has appeared. If artificial labor is not practicable chloral hydrate is perhaps the next most useful agent.

Shamelessness Extraordinary.—From a widely-scattered circular, appealing to the morbid fears of the sexual hypochondriac in the customary language, we quote:

"In all cases where the organ is small, or where it has become relaxed through self abuse, disease, or age, the conjestor, developing liniment, and nerve seeds should all be used at the same time.

The price of the conjestor is	$10 00
Three bottles of developing liniment . .	5 00
Six packages of nerve seeds	5 00
One suspensory bandage	2 00
	$22 00

"When the whole course of treatment is ordered at one time, we will prepare and send by express to any address on receipt of $20.00."

It is fully explained in other parts of the circular that the "conjestor" acts like a cupping glass, the air being exhausted, etc. The drug stores are acting as local agents in this execrable traffic. Is there no city law or State law in Chicago to stop it?

The Value of the Hands and of the Fingers.—Surgeons have often to estimate the chances of saving injured hands, and the comparative values of hands and fingers. According to a scale of value furnished by the Miners' Unions and Miners' Accident Insurance Companies of Germany, the loss of both hands is valued at 100 per cent., or the whole ability to earn a living. Losing the right hand depreciates the value of the individual as a worker 70 to 80 per cent., while the loss of the left hand represents from 60 to 70 per cent. of the earnings of both hands. The thumb is reckoned to be worth from 20 to 30 per cent. of the earnings. The first finger of the right hand is valued at from 14 to 18 per cent., that of the left hand at from 8 to 13.5 per cent. The middle finger is worth from 10 to 16 per cent. The third finger stands least of all in value; although, like other useless members of the community, it is surrounded by riches, its value is only from 7 to 9 per cent. The little finger is worth from 9 to 12 per cent. The difference in the percentages is occasioned by the difference in the trade, the first finger being, for instance, more valuable to a writer than to a digger.

Abolish the Cellar.—In a recent number of *The American Architect*, Mr. Edward Atkinson deals with the financial and architectural aspects of the question, *Cellar or No Cellar?* and easily shows that *no cellar* is by all odds preferable. The article proceeds upon the assumption that the influence of the cellar on health is pernicious—a truth that will hardly be doubted by hygienists. Almost every observant physician in general practice has met with cases of obstinate malaria and

various forms of ill-health that were probably or certainly due to the gases arising from the dank, undrained, unlighted hole beneath the house called a cellar. Of what possible use can such a hole be to a family if a house were rightly constructed is beyond human ingenuity to discover. In addition to its inevitable condition and quality, it is often also made the dumping-place of ashes, refuse, and all sorts of household débris. Now that it is proved not to be necessary, either from financial or architectural reasons, let the noisome nuisance be abolished!

Supernumerary Breasts and Multiple Pregnancy.—At a recent meeting of the Paris Société Médicale des Hôpitaux, MARIE (*La Semaine Médicale*, No. 38, p. 303) showed the photograph of a young woman who presented a supplementary nipple of the left breast. This anomaly had been the rule in the family of the woman through at least four generations. It was also an interesting fact that of eleven brothers and sisters four were twins, and that of fifteen brothers and sisters of the woman's father six were twins, and these alone presented the supernumerary nipple. This observation would seem to indicate that there is a correlation between the existence of supernumerary breasts and multiple pregnancy, and that the condition is not a simple erratic malformation, but an atavistic reversion to an ancestral type. That the faculty of multiple procreation does not reside alone in the female is demonstrated by the fact that the father of the patient begot two pairs of twins, and that one of his brothers (also a twin) begot at least one pair of twins.

Yellow Fever in Georgia.—From the *Abstract of Sanitary Reports* we learn that the captain of a sailing bark died June 25th, of yellow fever, on the Satilla River, near Brunswick, Ga. The local health officer was authorized by the Surgeon-General of the Marine-hospital Service to transfer twenty-five laborers who had been loading the vessel to Sapelo Quarantine for detention and observation. It appeared that the vessel had entered Havana on May 19th, and had unloaded in the open bay, no one going ashore but the captain. She sailed from Havana on June 9th and reached Satilla on the 15th. All hands had been well at Havana, during the voyage, and upon arrival. The vessel was discharged from quarantine June 19th, after being fumigated, and was towed to Satilla on the same day. The master was taken sick on June 21st, and a day later transferred to a camp eight miles in the country on the Satilla.

Responsibility for Negligence.—If a physician by the slightest negligence permits the death of a single patient he is held responsible for the death by the law and is punished accordingly.

And justly so!

If a public officer by the grossest neglect causes the deaths of many people (as in the disasters of Ford's Theater, the Coney Island Railroad accident, the holocaust at the World's Fair, etc.), nobody seems to be to blame, leastwise nobody is punished.

Is justice a matter of party and profession?

Long-lived People.—An English investigator has examined the habits of centenarians. They were almost invariably lean people, of spare habit, and of great moderation in eating and drinking. Of thirty-seven, three took no animal food, four took very little, twenty a little, ten a moderate amount, and only one acknowledged taking much meat. With regard to alcohol, the returns are much the same, and abstemiousness is found to be the rule of life with these centenarians. Fifteen had been total abstainers, either during the whole or part of their lives; two took very little alcohol, twenty-two a little, and ten a moderate amount.

Bacteria in the Soil at Different Depths.—Some investigations carried out by Dr. Alexander A. Houston, of Edinburgh, respecting the number of bacteria in the soil at different depths from the surface, go to prove that the microörganisms become less and less abundant as the depth from the surface increases. For example, the average number of germs in a gram of soil examined, which was taken from the surface, was 1,687,799; at a depth of three feet this average fell to 173,807; and at a depth of six feet it was only 410. These figures are interesting, and would tend to show that at certain definite distances from the surface the soil would be sterile.

Wild Animals and Snakes in India.—From a recent number of the *British Medical Journal* we learn that in 1891 24,300 persons were destroyed by wild animals and snakes in India, as against 23,801 in 1890. By far the larger proportion of deaths was due to snakes—more than 21,000 in each case. Cattle also suffered largely, but wild beasts are more fatal to them than snakes. The number of deaths relatively to population was from wild beasts 1 in 74,597 and in snakes 1 in 10,166.

A Valuable Constituent of the Human Body.—A chemist computes that at the present market value, the average human cadaver contains something like eighteen thousand dollars worth of calcium. But, like the fabulous values of aluminum in clay, or of the gold in seawater, the cost of extraction at present prevents all profit to the would-be enterprising manufacturers, and the schools of anatomy will have no immediate cause for alarm as regards commercial competition.

Physiologic Examinations of School Children of Washington are being made in order to determine the comparative rates of growth, influence of nationality, school hygiene, density of population, systems of physical culture, etc. Special measurements of the nervous system with the esthesiometer, dynamometer, baresthesiometer, and thermesthesiometer, are being made by Dr. MacDonald, to estimate the proper amount of study required, the proper age of advancement, etc.

A Husband's Consent not Necessary to an Operation on His Wife.—In a recent English case, in which a woman consented to have an operation performed, the husband's refusal did not reach the surgeon until the death of the wife, from chloroform. It was decided that in such instances the husband's consent was not legally necessary. But if not legally a prerequisite, should it not have been ethically required—provided, of course, the case was not one of great urgency?

An Aluminum Drainage-tube.—The use of aluminum in the arts is constantly extending. The advantages of the metal are essentially its lightness, its cheapness, its freedom from corrosion, and its pliability. One of the latest purposes to which it has been adapted is the making of drainage-tubes, the credit of which belongs to Dr. F. B. Robinson, of Chicago.

REVIEWS.

MANUAL OF CHEMISTRY. A GUIDE TO LECTURES AND LABORATORY WORK FOR BEGINNERS IN CHEMISTRY. A TEXT-BOOK, SPECIALLY ADAPTED FOR STUDENTS OF PHARMACY AND MEDICINE. By W. SIMON, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Baltimore, and Professor of Chemistry in the Maryland College of Pharmacy. New (fourth) edition. 8vo, pp. 490. Philadelphia: Lea Brothers & Co., 1893.

THE appearance within a year of another (the fourth) edition of Professor Simon's work indicates that our favorable opinion of the book, as already expressed, is shared both by teachers and students. The new and unique feature of representing color-reactions and colored precipitates by artistically produced illustrations is attractive, and cannot fail to become part of an object-lesson, so necessary for the successful study of chemistry.

The author has only in part accepted the uniform system of orthography and nomenclature for chemical terms recommended by the American Association for the Advancement of Science. In text-books such changes, however much they are to be desired, will be gradual.

The fifth part of the work, devoted to analytic processes, deserves favorable mention, and though the methods might have been entered upon more fully, this is hardly to be expected in a book of such compass as this.

The classification of the hydro-carbon derivatives is not in keeping with the usual custom of teaching them according to their production, first, by halogen substitution, and subsequently increased oxidation. This will, probably, make their study more difficult, as the student will lose sight of the systematic manner in which they are connected, and will have to impress them on his mind as isolated facts.

The consideration of the ptomaïnes, leukomaïnes, and toxalbumins, as well as the different albuminoids, together with the animal ferments, is an evidence that the author has kept his work up to modern advances.

The most important improvement and changes are found in Part VII, on Physiological Chemistry, which is of interest to the physician and student. The food-metamorphoses and the animal fluids and tissues are well treated; the introduction of the chemical study of the gastric juice is to be commended, though researches in this direction have been so great that it is hardly to be expected that a book like this should do full justice to the subject. The chemistry of the milk, as well as that of the urine, has been much enlarged, and, though some features might to advantage be introduced in the analysis of the urine, such as polarimetry and Haycraft's method for the determination of uric acid, the improvement in this direction has been very marked.

By frequent editions of this work Professor Simon has been enabled to perfect it so that it can be said to rank with the best text-books on pharmaceutic and medical chemistry in this country.

DISEASE IN CHILDREN. A MANUAL FOR STUDENTS AND PRACTITIONERS. By JAMES CARMICHAEL, M.D., F.R.C.P., Ed., Physician to the Royal Hospital for Sick Children; University Lecturer on Disease in Children, Edinburgh. 8vo, pp. xvi, 591. New York: D. Appleton & Co., 1892.

ATTENTION is at once attracted by the title of this work, "Disease *in* Children," in contradistinction to the diseases of children. In the text it is aptly pointed out that "It is not strictly correct to talk of diseases *of* children, as we would of women, who suffer from ailments peculiarly their own." The subject is considered in forty-five chapters and an appendix. A strange distinction is made by which typhoid fever, typhus fever, measles, Rötheln, diphtheria, varicella variola, vaccinia, erysipelas, epidemic cerebro-spinal meningitis, pertussis, and croupous pneumonia are considered as "fevers" and tuberculosis and syphilis as "infective diseases." There are numerous other evidences of the struggle to break away from early precept and the traditions of a previous generation. Thus, it is recorded that "diphtheria is essentially a miasmatic" disease; eleven pages are devoted to a discussion of scrofulosis, which is considered as an indication of "a disposition or tendency to certain definite pathological evolutions, a diathesis in which, under varying conditions, certain tissues become affected with diseased [disease-] processes of a peculiar type, constituting the scrofulous cachexia"; "tuberculosis of the lung" is said to be "usually a local expression of general tuberculosis," and is discussed under the subdivisions "acute phthisis," "chronic phthisis," and "caseous broncho-pneumonia or catarrhal phthisis." On the other hand, we find a general and almost unreserved acquiesence in the germ-etiology of the diseases commonly accepted as infectious; and in the same tendency true croup and laryngeal diphtheria are considered synonymous terms. An excellent and comprehensive scheme of clinical examination is given which we can heartily commend, for we are among those who believe that examinations and records can never be too fully or too carefully made. We are convinced that more mistakes in diagnosis result from carelessness of investigation than from ignorance. Under the treatment of scarlatina it is stated that "three methods deserve notice: isolation, disinfection, and inoculation. The last method has not yet been accepted by the profession, but it is certainly warranted in principle, if a modified or attenuated virus could be obtained, which, by inoculation, would confer immunity from the disease. Experiments in this direction have already been made by Dr. Strickler, in America, who inoculated children with virus obtained from the horse supposed to be suffering from scarlatina or an allied disease. The children contracted local sores at the point of puncture, and some degree of lymphatic enlargement in the neighborhood, and subsequent immunity from the disease after exposure to infec-

tion." We have in the foregoing noted most of the points by which we were especially struck in a reading of the work; there is, however, a good deal to commend. The various sections are well written, and bear the stamp of large experience and careful observation.

A TREATISE ON RUPTURES. By JONATHAN F. C. H. MACREADY, F.R.C.S., etc. With twenty-four lithographed plates and illustrations in the text. 8vo, pp. 442. Philadelphia: P. Blakiston, Son & Co., 1893.

As surgeon to the City of London Truss Society, Mr. Macready has enjoyed special opportunities for the study of hernia in its various forms, as well as of the methods of its treatment and their results. In the present work he not only gives the teachings of his own experience, but has drawn on his very extensive acquaintance with the literature of the subject, ancient as well as modern. With these resources he has prepared a most valuable treatise, so clearly written that a tyro may read it, and yet so comprehensive that a practitioner of long standing may find instruction in it.

The author expresses his preference for the term "rupture," as indicated in the title given. We must confess that his reasons for this seem to us insufficient. The word "hernia" has, indeed, been sometimes misapplied; but, as he admits, the word rupture conveys an incorrect idea of the pathology of the affection, and is perfectly proper when employed to designate, for example, the tearing of a muscle or a vein.

The arrangement of the subject seems to us very philosophic. Part I, embracing thirty-three chapters, deals with conditions not involving disturbances of the function of the bowel. Part II contains seven chapters, and is devoted to those in which that function is interfered with. Of course, the two are not absolutely distinct, but they are sufficiently so for the practical purpose of discussion.

Another good feature of this book is the placing at the end of each chapter of the references contained therein, they being indicated in the text by numbers in small type.

The various forms of hernia are well and clearly described. As to the theories of the production of such lesions, the long mesentery theory, the dragging theory, and the theory of pressure from within, we agree with our author in favoring the last-named.

An interesting exposition is given of a matter that too often escapes the notice of surgeons—the changes of shape that the abdomen undergoes in cases of long-standing hernia, especially in persons in advanced life.

So far as can be judged from the illustrations and descriptions in this work, we should judge that the trusses in use in England are much more complex and clumsy than those generally employed in this country. And we think our author has laid too little stress upon the importance of accurate fitting of the whole apparatus. It is not the amount of force, but the exact application of it just where it is needed, that makes a truss efficient.

As to the radical cure of hernia by operation, the different methods are clearly though briefly described; and while no one procedure is specially advocated, preference seems to be given rather to those by open wound than to those that are done subcutaneously.

The illustrations are excellent. The book is well and accurately printed, and will doubtless be accorded the favor that it fully deserves.

HANDBOOK OF INSANITY FOR PRACTITIONERS AND STUDENTS. By DR. THEODOR KIRCHHOFF, Physician to the Schleswig Insane Asylum, and Privatdocent at the Kiel University. Illustrated with eleven plates. Pp. 362. New York: William Wood & Co., 1893.

THIS volume, which is one of the "Medical Practitioner's Library" series, is without a preface. It is made up of two parts called general and special parts. The former, comprising 178 pages, treats of the anatomic basis and the location of mental disturbances, and the classification, causes, symptoms, diagnosis, treatment, and history of insanity. The latter part deals with the various special forms of insanity, which are divided into "Simple mental disorders," and "Mental disorders associated with permanent anatomical changes in the brain or with general diseases."

The general part, which is very readable, discusses the whole subject of insanity from a broad and comprehensive standpoint, and would be exceedingly helpful, we believe, to the student or general practitioner attempting to grasp the subject of insanity. It serves as an excellent introduction to the special part.

While a conservative spirit is maintained throughout the work, making it a safe guide, yet the author shows familiarity with the investigations and progress of recent years. His views on mechanical restraint are most sensible. He says: "In rare cases, however, it would be fanatical to dispense with restraint." In places the conservatism is extreme: for example, when he says that all remedies other than the bromids are useless in epilepsy. A number of excellent plates representing typical forms of insanity will be helpful to the student. The publishers' work is very creditable.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fourth Annual Meeting, held at Milwaukee, Wis., June 6, 7, 8, and 9, 1893.

(Continued from page 84.)

SECTION ON DERMATOLOGY AND SYPHILOGRAPHY.

FIRST DAY—JUNE 6TH.

DR. L. A. DUHRING, of Philadelphia, read the President's Address, which was entitled "The Scope of Dermatology." He pointed out the difficulty of separating so-called cutaneous diseases from many general diseases accompanied by cutaneous symptoms.

The term "skin-diseases" can no longer be used in its ancient sense, and these affections cannot be looked upon as morbid entities, as diseases whole and complete in themselves. The tendency of modern dermatology is to use the term to include all of the morbid manifestations that may occur upon the integument.

The objective study of affections of the skin is fascinat-

ing and very important, but it is not comprehensive enough, without invoking the aid of general pathology and considering the relations of the skin to the general economy. Cutaneous diseases must be studied not only as localized areas of superficial disease, but as indexes to disease elsewhere, or as a key to some morbid process that may originate or have its seat in other tissues of the body. The strictly local nature of some diseases is plain, as in the parasitic affections, certain inflammations due to local causes, as rhus poison; but while this holds true for a considerable number of diseases, there are still many that are in reality widespread diseases, the integument being only one of the organs of the body involved in the process, as the so-called exanthemata, other eruptive fevers, the eruptions due to various poisoned states of the system, as in septicemia, glanders, leprosy, and syphilis. Our ideas of the so-called skin-diseases, and the whole subject of dermatology, must be greatly enlarged. This branch of medicine should include all morbid manifestations that appear on the skin, whatever may be their cause, nature, and character. Dermatology has properly to do with the integument and all that pertains to it, and, moreover, with all of the varied causes that may disturb this organ.

The idea of the vast array of cutaneous affections being morbid entities confined to the skin must, in many cases, be abandoned in favor of the principles of general medicine. We should study these diseases with the view of learning all that they can teach us, not only of the skin, but of general pathology. We should look in the majority of cases beyond the mere eruption, valuable and important as this is in all cases as a guide to the pathologic process at work. The cutaneous disturbance in many instances is distinctly indicative of some disorder, irritation, or localized disease in other regions, organs, structures, or fluids of the body.

Dermatology should be for the physician as a key with which the skin is made to reveal, in many instances at least, the nature of the morbid process in the general economy, or in other organs, which without this aid might remain obscure, as in the exanthemata, syphilis, leprosy, and other diseases.

DR. OHMANN-DUMESNIL, of St. Louis, read a paper entitled "Erythema Exfoliativum Recurrens." He referred to six cases of this interesting affection, giving the reasons why the term erythema is used, instead of dermatitis. He believes erythema to be dependent upon an exaggerated circulation, while dermatitis is a true inflammatory process.

In the cases reported there was an infiltration of lymph-cells, with a periodicity of the attacks, such as occurs in hay-fever. The mental condition may have some influence in the production of these attacks.

DR. GRINDON, of St. Louis, pointed out that an erythema often degenerates into a dermatitis. In the cases reported the cutaneous manifestations may have been due to the presence of some irritant in the blood, such as toxalbumins or bacteria.

DR. LYDSTON, of Chicago, likewise believed the trouble to be due to a condition of toxemia. The recurrence of the disease is comparable to the recurrence of attacks of epilepsy and of other neuroses.

DR. RAVOGLI, of Cincinnati, referred to a case of ichthyosis, in which a layer of epiderm as hard as wood formed upon the fingers, after a time being thrown off like the stalls of a glove, the fingers remaining entirely well until, following the occurrence of neuralgic pains, a new layer would form, to be disposed of in the same way as the former one.

This case, and those reported, were considered as tropho-neuroses, in the mechanism of which the vaso-motor nerves play an important rôle. The erythemata nearly all display a tendency to relapse. It is often difficult to state when an erythema becomes a dermatitis. When, however, exudation and necrosis of the horny layer occur, the process is more profound than a simple hyperemia.

DR. A. RAVOGLI, of Cincinnati, read a paper "On the Nature of Eczema," detailing the results of some unfinished experiments. The inoculation of rabbits upon the shaved ear with pure cultures of the staphylococcus pyogenes albus yielded no result. After blistering both ears of rabbits by means of croton oil, one ear was inoculated with the cultures. The uninoculated ear returned to its normal condition in six or seven days, while the other, after a week, began to inflame and to discharge a serous fluid, and subsequently became covered with thick, yellowish crusts, on removal of which excoriations appeared. The symptoms were quite like those of eczema, and continued for more than four weeks.

The conclusion was reached that eczema is not simply a dermatitis, but that dermatitis is the cause of eczema, which is a chronic process, in most cases dependent upon the presence of the staphylococcus beneath the epithelial cells.

DR. BULKLEY objected that all cases of eczema are not chronic in course. The condition may also be acute. In many cases the cause is to be found in the nervous system.

DR. DUHRING admitted the distinction between eczema and dermatitis. Clinically, some cases conform to the type of eczema, while others are instances of ordinary dermatitis. There are still other cases, however, in which the clinical picture is complete. Great difficulty attends an etiologic classification of eczema.

DR. RAVOGLI stated that a knowledge of the etiology of disease must lead to the application of remedies with greater certainty of success. He had no doubt that purulent discharges frequently form the starting-point of eczema, and that the affection is thus often contagious. A healthy epidermis constitutes a safeguard against the action of the staphylococci, but when the epidermis is scratched or inflamed the conditions are favorable for the production of eczema. The experiments thus far made have been limited to the staphylococcus albus, but the staphylococcus aureus and citreus will be similarly studied.

SECOND DAY—JUNE 7TH.

DR. L. D. BULKLEY, of New York, read a paper entitled "Notes on Feigned Eruptions." He related the case of a girl who had been ill with spinal meningitis, and who presented some twelve red patches of excoriation upon the cheeks, covered by crusts; other patches were scattered on the temples, others on the neck. On the arms were abrasions of the skin, running in the axis of the limbs, with inflammation more severe than on the face. The affection was painful, but its nature was doubtful. The girl was intelligent, but presented a

neurotic history. Careful study of the lesions aroused the suspicion that they were self-produced. The object was found in the desire to go to a certain watering-place. It was learned that the lesions had been produced by rubbing the skin with sand paper.

In another case, in a child of wealthy parents, superficial excoriations were present upon the feet, leg, arm, with some erythematous areas upon the face. Many remedies had been used without avail, until it was found that the eruption was caused by rubbing the skin with the fingers, from which a pleasurable sensation was derived. The sexual sense is sometimes stimulated by rubbing certain portions of the skin.

DR. OHMANN-DUMESNIL referred to the case of a woman who produced sores on her chest by applications of argentic nitrate.

DR. FRANK referred to the case of a boy who, having learned that the taking of antipyrin would be followed by the appearance of an erythematous eruption, would take the drug for the purpose of producing the eruption, in order to be kept from school.

DR. GRINDON said that he has seen children that had cut off the eyebrows and eyelashes to simulate alopecia. He referred to the case of a man of remarkable intelligence who used to burn his arm with a lighted cigar.

DR. LONGFELLOW, of Cincinnati, referred to the case of a dressmaker, who had an acne eruption, and took large doses of potassium iodid for the purpose of maintaining the eruption.

DR. RAVOGLI related the case of a young man who, to escape military service, produced an eruption of large blisters and excoriations by the application of the cortex of timelia. He referred to the practice, in certain parts of Italy, of inoculating tinea favosa from one person to another for the purpose of securing exemption from military duty.

DR. DUHRING stated that he has seen very few cases of feigned eruptions, and most of these in dispensary practice, and not in private. He has also seen eruptions that might have been taken for feigned eruptions, but which were really produced by nature. In the case of one woman, who presented symptoms of hysteria, and had puzzled many physicians, an eruption that was supposed to be artificial, and that resembled pemphigus, was found to be a true neurotic affection of the skin.

Weir Mitchell has also reported the case of a woman who presented a large sore covered with a singular crust, which had been judged to be produced by chemicals, but it was afterward learned that it resulted from other causes.

DR. LONGFELLOW, of Cincinnati, read a paper entitled "The Local Treatment of Psoriasis." For the removal of the scales he recommended a kind of soap containing sulfur and green soap. As an application to the skin, he recommended a mixture of collodion and tar, and also chrysarobin and pyrogallic acid mixed with collodion.

DR. OHMANN-DUMESNIL said that psoriasis of the scalp, especially in women, will not usually submit to the means recommended. He therefore uses oil of cajuput, which he finds very useful and of easy application.

DR. BULKLEY recommended the use, twice a day, of an ointment containing hydrarg. ammoniat., bismuth. subcarb., āā ʒss; acid. carbolici, gtt x; unguentum ammon. rosat., ʒij—M. Ft. unguent. The scalp should not be washed too often. Aristol is useful, as is pyrogallic acid, 5 per cent. in collodion, covered with wax paper. Twenty-five per cent. of the cases can be better cured by means of internal and hygienic means than by means of local treatment.

DR. GRINDON read a paper entitled "Recurrent Zoster." He called attention to varieties of vesicular eruption that display a tendency to frequent relapse, but which also resemble zoster, though failing to show all of its characteristics. These varieties he designates zosteroids.

DR. RAVOGLI read a paper entitled "Purpura Recurrens." He referred to two cases, one in a male the other in a female, both of whom presented petechiæ on both legs, with edema and pains in the joints, relapsing every two or three weeks for a long time. There was no fever. No albumin could be detected in the urine, but there was marked anemia, the diminution in the number of red corpuscles being the principal feature. Both cases had been treated with anti-rheumatic remedies without benefit. Under treatment with tincture of ferric chlorid and nux vomica internally, and the application of rubber bandages to the extremities, complete recovery ensued.

The hemorrhagic extravasations were ascribed to diminished plasticity of the blood itself from a deficiency of albumin and the badly nourished condition of the tunics of the bloodvessels.

The edema is to be explained by the diminished resistance of the tissues and the increased intra-vascular pressure, with lymph-stasis. The recurrence is related to the functions of the vasomotor nerves. Anemic individuals are more susceptible to stimuli than others.

DR. FRANK read a paper on the "Treatment of Ulcers of the Leg." He classified ulcers as idiopathic and symptomatic, and referred them to (1) want of circulation, and (2) stasis. The condition occurs most frequently among the poor, who are obliged to engage in hard work.

In treatment, zinc-gelatin was recommended to keep the ulcer from contact with the air, and speedily leading to recovery.

DR. RAVOGLI related that he had found it wise to omit the use of zinc-gelatin in cases of fluid discharge. Some cases are attended with such intense pain that the patient cannot bear the presence of an impermeable dressing. In these cases the application of cold water, in the form of a bath, will diminish the inflammatory symptoms. When the necrotic tissue undergoes sloughing, antiseptics are indicated, followed by the application of adhesive plasters, so as to bring as intimately in contact as possible the edges of the ulcer. When the ulcer has callous edges, which retard recovery, these should be cut off with scissors. At the conclusion of the treatment, when the leg is infiltrated and shows varicose veins, the application of the rubber bandage is essential.

DR. PRICE expressed the view that in most cases a saturated boric dressing is the most appropriate, while in some applications of a watery solution of tannin are the most satisfactory. In callous ulcers scarification through the scar-tissue, and an antiseptic dressing are often successful. Balsam of Peru has good effect in stimulating the granulations; as does also the application of a sheet of lead to the ulcer.

DR. M. B. RICKETTS presented a paper entitled "The Obliteration of Pigmentation on the Human Skin, with Experiments."

DR. BULKLEY read a paper "On the Use of Waxed Paper in Dermatologic Practice." He said that twenty years ago attention was called to the use of waxed paper in certain diseases of the skin. This is not intended to take the place of collodion, but only to be employed when it is desired to exclude the air from the affected surface.

DR. DUHRING announced a formula for tincture of coal-tar, which he has found useful in many affections of the skin, and which may be combined with other substances in the form of an emulsion. Aqua bituminis, tinctura picis, coal-tar dissolved in alcohol, caustic soda, and tincture of elm make a fine mixture.

DR. DUNN presented a paper entitled "A Case of Leprosy in a Native American without Known Infection."

CORRESPONDENCE.

ENLARGED AND DISPLACED SPLEEN.

To the Editor of THE MEDICAL NEWS,

SIR: Your excerpt from the *Annals of Surgery* on the "Operative Removal of an Enlarged and Displaced Spleen," published in THE MEDICAL NEWS of July 8, 1893, induces me to mention a case that came into my hands in 1889, to illustrate our liability to err in the diagnosis of enlargements within the body, and to record the peculiar termination of the case.

In the fall of 1888, while attending a member of the family of M. T., a farmer living in the Missouri River bottom in Clay County, Missouri, a malarious locality, my attention was called to an enlargement in the *right* inguinal region of Mrs. M. T., a woman thirty-two years of age, who had borne five healthy children. The enlargement was at the time apparently about the size of a child's head at birth, rounded, and more or less firm, but not hard. It was not freely movable, though it could be moved somewhat.

Mrs. M. T. was in fairly good health, of spare build, and light complexion. The tumor had existed for about six years, varying in size, being sometimes larger and sometimes smaller. The woman had never suffered much pain. Neither her appearance nor her history indicated chronic malarial infection. I advised her to let the mass alone until such time as it became troublesome and gave her distress, when an operation would be demanded.

I was called to see her again in the spring of 1889. The time for operation had apparently arrived, as in the previous few weeks the tumor had enlarged considerably and had become quite painful. I called upon a prominent surgeon to examine the case with me, and an operation for the removal of the mass was decided upon. While on the table, under ether, a closer examination noted the absence of the spleen from its proper place. A hypodermatic syringe, armed with a long needle, revealed the contents of the tumor to be blood, and the operation was postponed indefinitely. The woman was at that time four months pregnant. She was put upon the old-fashioned tincture of iron, iodin, Fowler's solution, and glycerin mixture, and the enlargement duly decreased and almost disappeared.

In September she was delivered of a healthy child. Nothing noteworthy occurred during the labor or puerperium. Six weeks thereafter, however, I was called in haste on Sunday morning to see the patient, as the tumor had rapidly enlarged and was very painful. I found it occupying its place in the *right* inguinal region. It was about the size of the average adult's head. My efforts to allay the pain were only partially successful. The temperature was normal. There was thirst, which increased up to the time of her death on Monday at noon. The bowels were moved three or four times naturally during Sunday and Sunday night. Vomiting was troublesome all day Sunday, and, by Monday morning, became stercoraceous. The skin assumed an ashy-white color.

I made a post-mortem examination on Tuesday morning, and found the enlargement to be the spleen. Death was caused by the accidental twisting of the elongated pedicle, which was about half the size of my wrist. The spleen had been turned completely around twice, strangulating the splenic vessels and causing rupture of the rounded portion of the organ opposite the attachment of the pedicle. There were three points of rupture: one about five inches in length and half an inch deep, and two shorter ones on either side of the long one and about an inch from it. It is needless to say that the peritoneal cavity was full of blood.

Viewing this case retrospectively, the woman's life might have been saved by replacing the spleen at the time of preparation for operation six months before, but nothing seemed to warrant such a procedure at that time. When last called, untwisting the pedicle, suturing the rents, and cleaning out the peritoneal cavity might have enable her to recover.

Respectfully, H. O. BEESON, M.D.

NOEL, MCDONALD CO., MO.

DIABETES MELLITUS IN A CHILD, WITH RECOVERY.

To the Editor of THE MEDICAL NEWS,

SIR: That a form of diabetes mellitus can exist in a child, from which perfect recovery is possible, I am led to believe from a case coming under observation in April, 1890.

E. J., aged six years, having consumed quite an amount of sugar-water, taffy, "wax," and other saccharine products of the sugar-making season of 1890, was observed by his parents to have quite an increase of frequency in micturition, coupled with great thirst, emaciation, and increasing weakness, though preserving a good appetite. This condition had lasted, to their knowledge, two or three weeks when brought to my notice. The amount of urine excreted amounted to from eight to ten pints. The secretion was of pale-straw color, had a specific gravity of 1040, and responded quickly to every sugar-test that could be made.

Reserving a prognosis in such a case, occurring in a family in every way healthy, and with no other known cause than the ingestion of excessive quantities of the product of the sugar maple, I placed the little fellow on five drops of the fluid extract of ergot every four hours,

prescribing an anti-diabetic diet, and ordered laxatives to overcome the constipation, which had been constant from the beginning.

In a week the specific gravity of the urine was down to 1028, and in two weeks it was normal. The boy made an uninterrupted recovery, and is now a healthy lad, although he at one time had saccharine urine for at least five weeks.

Respectfully,

W. W. PENNELL, M.D.

FREDERICKTOWN, O.

PRECOCIOUS PREGNANCY.

To the Editor of THE MEDICAL NEWS,

DEAR SIR: As an addition to your list of early pregnancies the following may be of interest:

G. T., a well-developed colored girl of this city, after a normal labor, gave birth, April 24, 1893, to a small, but apparently full-term female child. The mother was born, according to the statement of her parents, on June 1, 1879, and was consequently thirteen years, ten months, and twenty-three days old, when her child was born. The little one weighed almost six pounds, and at first did well, but died, after four or five weeks, from lack of proper nourishment and care.

Respectfully,

CHARLES H. PRESTON, M.D.

DAVENPORT, IOWA.

NEWS ITEMS.

New Medical College Buildings in Chicago.—The Laboratory Building for the Chicago Medical College, just completed, is a handsome and commodious structure, one hundred feet square and five stories high. The laboratories are of the most approved character and very commodious. Ample facilities are afforded for advanced laboratory work and original research. The anatomic laboratories have asphalt floors and an abundance of lockers for students' clothing and washing facilities. They are well lighted and well ventilated. An ice machine for cooling the ice-box, in which the anatomic material is kept, is one of the many novelties of construction.

Beside the Laboratory Building there is now rising another structure, which will be complete by September 1st, and is intended to furnish additional lecture-rooms for the college and model accommodations for the South Side Dispensary. The sick will be cared for, and clinical teaching will be given here both mornings and afternoons. Immediately south of these buildings is the site of Wesley Hospital. Its present temporary structure is already outgrown and will soon be replaced by a fine hospital.

Mercy Hospital, which is near by, is now being doubled in capacity, and will hereafter contain four hundred beds. This will place at the disposal of the Chicago Medical College nearly six hundred beds from which to obtain clinical instruction.

The Pan-American Medical Congress Excursion to Rome.—It has been definitely determined that the Pan-American Medical Congress Excursion to the Eleventh International Medical Congress will sail on the S. S. "Werra" from New York, September 9th, the day following the adjournment of the Congress at Washington, and will arrive at Genoa, September 20th, four days before the opening of the Rome meeting.

Round trip steamer tickets may be procurred for $142.50 for inside rooms, and $150.00 and upward for outside rooms. Tickets are good for members of the Congress and their families, and may be used at the option of holders to return on any steamer of the line from Genoa, or on Saturday steamers from Bremen, or Sunday steamers from Southampton, during the months of October, November, and December. Physicians desiring to avail themselves of this exceptionally low rate should at once become members of the Pan-American Medical Congress by sending the registration fee ($10.00) to the Treasurer, Dr. A. M. Owen, Evansville, Ind., and informing the Secretary-General, Dr. Chas. A. L. Reed, Cincinnati, of their intention to join the excursion. The trip includes a stop at the Azores and Gibraltar and a sixty hours' sail along the picturesque coasts of Spain, France, and Italy.

Dr. John B. Hamilton has assumed editorial charge of the *Journal of the American Medical Association*. Dr. J. C. Culbertson has resumed his editorial connection with the *Cincinnati Lancet-Clinic*.

A Boylston Medical Prize for 1893 has been awarded to Dr. Wm. E. Hughes and Dr. W. S. Carter, of Philadelphia, for an essay entitled, "A Clinical and Experimental Study of Uremia."

Naunyn, of Strassburg, has been elected to the chair of Internal Medicine at Vienna, as the successor of Kahler, deceased.

In Memory of J. Marion Sims.—A bronze statue of Dr. J. Marion Sims is soon to be erected in Central Park, New York.

Vidal, the eminent French dermatologist, died recently at the age of sixty-five.

BOOKS AND PAMPHLETS RECEIVED.

The Porro-Cesarean Operation, Tested by a Trial of Sixteen Years, and in Twenty-one Different Countries, under Two Hundred and Twenty-four Operators. By Robert P. Harris, A.M., M.D. Reprinted from the New York Journal of Gynecology and Obstetricts, 1893.

Brain Surgery: Injury Received Five Years Ago, followed Three Years Later by Convulsions and Paralysis; Blood-clot found under the Dura Mater and Removed; Patient Improving. By F. C. Schaefer, M.D. Reprinted from the Chicago Clinical Review, 1893.

Character—the True Test of the Physician. By J. W. Long, M.D. Reprinted from the Maryland Medical Journal, 1892.

Cholera. By E R. Axtell, M.D. Reprinted from the Denver Medical Times, 1893.

I. The Demands for Sterilization. II. A New Combination Sterilizer for Asepticizing Simultaneously Water, Instruments, and Dressings. By Frank J. Thornbury, M.D. Reprinted from the New York Medical Journal, 1892.

Surgical Dressing, Aseptic and Antiseptic. By Seward W. Williams, Ph.C., F.C.S. Reprinted from the Pharmaceutical Record, 1893.

Responsibility of the National and State Governments for the Protection of the Purity of the Water-supplies. By Benjamin Lee, M.D. Reprinted from the Journal of the American Medical Association, 1892.